

2. *Field Notes on the First and Second Expeditions of the Cape Museums' Mammal Survey of the Cape Province; and Descriptions of some New Subgenera and Subspecies.*—By G. C. SHORTRIDGE, Director, Kaffrarian Museum, King William's Town.

(With Plates VI and VII.)

EXPEDITION NO. I: LITTLE NAMAQUALAND
(OCTOBER 1936—FEBRUARY 1937).

On a Collection of approximately 2500 Mammals from Little Namaqualand, including Records of Species collected between Upington and the Aughrabies Falls in 1921.

LITTLE NAMAQUALAND is here regarded as comprising the region lying between the Orange River in the north, latitude 31° in the south, longitude 19° in the east, and the Atlantic Ocean on the west. It is the most arid part of the Cape Province. The yearly rainfall at Springbok averages 7 inches, and at Port Nolloth $2\frac{1}{2}$ inches.

Except on the Kamiesberg there is practically no surface water. The mountains and plateaux known as the Kamiesbergen, which rise to over 5000 feet (Welkom Kop, 5589 feet; Eselkop, 5456 feet), attract a much more adequate rainfall and have a contrastingly temperate climate. In consequence the vegetation on the higher slopes and plateaux is relatively luxuriant.

The Kamiesberg, frequently under cloud, forms a fertile oasis, and the mountain scenery between Garies and Leliefontein is very beautiful. Elsewhere the general aspect of Little Namaqualand during the greater part of the year is barren in the extreme: the sandy plains are sparsely clothed with dwarf desert plants, many of which are succulents. Apart from a narrow fringe along the Orange River, there are no trees of any description.

Between September and October, however, after the first light spring rains, Namaqualand changes, almost overnight, into one of the world's most magic gardens; the plains and hillsides for the short period of about six weeks become brilliantly carpeted with wild flowers, innumerable in variety and colours. On the Kamiesberg

the flowering season continues until about the middle of December. Except in the extreme south, along the eastern border, and close to the coast, there are almost everywhere masses of outcrop, stony kopjes and rocky mountain ranges. Camps were made at the following places:—

1. *Witwater*: altitude 3500–3800 feet, a plateau high up in the Kamiesberg almost entirely surrounded by stony hills. There are a few farms, and small plots under cultivation.

2. *Eselfontein*: altitude 4300–4350 feet, close to Leliefontein Hottentot Mission, the highest plateau on the Kamiesberg.

These plateaux are watered by small perennial mountain streams which disappear underground before reaching the plains. The vegetation on the higher slopes is heathy and not unlike that on the mountains of the south-western Cape. Light crops of wheat are grown; goats and a few cattle and sheep are kept.

3. *Platbakkies*: altitude 3460 feet, about 20 miles east of the Kamiesberg. Arid high-karooveld with occasional rocky ridges and rough stony tracts. Country quite typical of “Bushmanland.”

4. *Goodhouse*: altitude 300 feet approx., on the south bank of the lower Orange River at Raman’s Drift. At this point the Orange River flows between almost unbroken chains of highly mineralized hills which rise from 500–1200 feet. All level country consists of heavy white sand. For the greater part of the year hardly a trace of vegetation is visible, except along the river’s edge where there is a thin fringe of tree growth. In contrast to these desert surroundings is the intensely green Citrus Estate of Goodhouse, irrigated by a system of canals which lead off from the river (owner, Mr. C. Weidner).

5. *Eenriet*: altitude 3300 feet approx., 7 miles north of Steinkopf. A waterhole close to rocky hills which rise between 500 and 800 feet above the surrounding level. Beyond the hills there are wide stretches of sandveld scantily clothed with low karoo scrub and intersected here and there by dry watercourses.

6. *Port Nolloth*: A camp (altitude 50 feet approx.) was made about 15 miles inland where the white coastal sand-dune belt meets the firmer reddish-sandy country, and near the first broken line of wind-swept hills which rise to about 600 feet.

7. *Kameelboom*: altitude 800 feet approx., in the bed of the dry Spoeg River, about half-way between Garies and Hondeklip Bay. Surrounding hills rise to about 1000 feet. Red and white sandy country much broken up by rocky outcrop. Vegetation largely succulent; shrubby bushes amongst the rocks and between the hills.

During the British and Kaffrarian Museums' Expedition to the middle Orange River in 1921, collections were made close to *Upington*, *Swartkop*, *Louisvale*, and the *Aughrabies Falls*. The Upington and Aughrabies camps were on the north bank of the Orange River, those near Swartkop and Louisvale on the south bank.

Out of 106 species recorded, 78 were collected; 20 are extinct, or nearly so; 4 are of doubtful occurrence. Names of species in brackets indicate that specimens were not obtained.

Contributors towards the Cape Museums' Mammal Survey include The Museum of Comparative Zoology (at Harvard University, United States of America), The South African Museum (Cape Town), The Natal Museum (Pietermaritzburg), The Albany Museum (Grahamstown), The McGregor Museum (Kimberley), The Port Elizabeth Museum, The East London Museum, The Kaffrarian Museum (King William's Town), The National Research Council, and Dr. H. Merensky.

FAMILY MACROSCELIDAE.

1. *Elephantulus rupestris rupestris* (A. Smith).

Hottentot: /ÜÏ/Ä ≠ GUÏ DURÜB (Eenriet); !KHU ≠ GUÏB (Goodhouse); HÄ : NG DURÜB (Kamiesberg).

Specimens from Witwater, Platbakkies, Eenriet, and from Louisvale. The series from Eenriet may be taken as topotypical of *E. rupestris*, which was described from "Mountains towards mouth of Orange River." Plentiful in rocky situations. In the south replaced coastally and to some extent subcoastally by *Elephantulus capensis*.

In cool weather Elephant Shrews may often be seen jumping from rock to rock or running from one patch of cover to another at all hours of the day. I have occasionally observed them on warm moonlight evenings. Pregnant females contained 1-2 fetuses. Newly born young are relatively large, being the size of full-grown House Mice and clothed with short hair.

2. *Elephantulus capensis* Roberts.

Specimens from Witwater, Eselfontein, Kameelboom, Paddagat.

Elephantulus capensis and *rupestris* are similar in habits, both favouring rocky and hilly situations. They overlap at Witwater in the southern Kamiesberg. At Eselfontein (about 1000 feet higher up than Witwater), and at Kameelboom (between the Kamiesberg and Hondeklip Bay), only *E. capensis* was collected. At Plat-

bakkies (19 miles east of the Kamiesberg) only *E. rupestris* was found.

Latitude 30.5 approx. appears to be the meeting ground of (northern and eastern) *rupestris* and (southern and south-western) *capensis*.

3. *Macroscelides proboscideus melanotis* Ogilby.

Hottentot: /HEI/Ā ≠ GUÏ : DURÜB (Eenriet).

Specimens from Witwater, Platbakkies, Eenriet, Port Nolloth, Kameelboom.

An Elephant Shrew, presumably a *Macroscelides*, was reported from the plains on the north bank of the Orange River near Upington in 1921.

This Little Namaqualand series matches closely examples of *E. p. melanotis* from Berseba, Great Namaqualand.*

Widely distributed in Little Namaqualand and plentiful in level Karooveld. *Macroscelides* was not found on the Kamiesberg above the altitude of Witwater. These Elephant Shrews often take shelter in the warrens of karoo *Otomys*inae. When handled they will occasionally bite feebly, but their small teeth cannot penetrate the skin.

4. *Macroscelides proboscideus isabellinus* Shortridge.

One specimen from Port Nolloth (near Township).

A pale desert race of *M. proboscideus*, only known as yet from the type. It is possible that *M. p. isabellinus* may be an individually pallid individual of *M. p. melanotis*, since the latter occurs in the same region.

FAMILY CHRYSOCHLORIDAE.

5. *Chrysochloris namaquensis* Broom.

Hottentot: XARIMU DURÜB (Kamiesberg); /ĀM̃ ≠ ĀRE
HĀBA TSURU (Eenriet).

Specimens from Witwater and Eselfontein.

Only known previously from the type from Garies (a skull from an owl casting—in the South African Museum).

* The type of *M. p. melanotis* is supposed to have come from "Damaraland" in 1838. No form of *Macroscelides* has otherwise been recorded from as far north as Damaraland proper—as defined to-day, and I do not believe the genus occurs anywhere north of the Tropic of Capricorn. I now propose to fix Berseba in central Great Namaqualand as the type locality for *Macroscelides proboscideus melanotis* because specimens from Berseba were compared with the type by Oldfield Thomas and considered to agree with it.

A little smaller than *C. asiatica*: colour above light seal-colour strongly washed, in the majority of specimens, with iridescent greenish or violet. One or two specimens are paler, resembling *C. concolor*, but with pale greenish reflections. Whitish-buff cheek markings, as in *C. asiatica* and *concolor*. Underparts greyish-buff with a satiny sheen; throat creamy-white. The skull of *C. namaquensis* (Kamiesberg) differs from that of *C. concolor* in having smaller, less raised temporal bullae, and in the interorbital constriction being slightly less inflated. Skulls of the Kamiesberg series referred to *namaquensis* are longer, broader, and more massive than the type, which may not be quite adult.

At Eselfontein the shallow tunnels of Golden Moles were often observed perforating the large mounds of *Bathyrergus*. In the Kamiesberg they were found both in cultivated and uncultivated land.*

Measurement Table of the Skins and Skulls of 9 Kamiesberg Specimens and of the Type Skull of *Chrysochloris namaquensis*.

Original number	562.	966.	988.	1010.	654.	719.	745.	957.	1016.	Type.
Sex	♂	♂	♂	♂	♀	♀	♀	♀	♀	..
Head and body	114	105	115	111	98	98	98	98	112	..
Hindfoot	12	12	11.5	12	11	12	10.5	11	12	..
Skull:										
Total length.	22	22.5	22	22.5	22.5	23	21.5	23	22	20
Basal length	17.5	18.5	18.5	17.5	17.5	18	17	17.5	17	16.5
Greatest breadth	18	18	18	17	17	17	17	17	17	15.5
Greatest height	11.5	12	12	12	11.5	11.5	11.5	11.5	11	11
Interorbital breadth	6.5	7	6.5	7	6.5	7	7	7	7	6.5
Palate across posterior molars	8.5	9	8.5	9	8.5	8.5	8.5	9	8.5	8.5
Dental series: front of incisors to back of posterior molar	9.5	9.5	10	10	10	9.5	9.5	9.5	9.5	9.5 mm.

* *Chrysochloris damarensis*, as its name indicates, is supposed to have come from "Damaraland." When in South West Africa I carried about the skin of a Golden Mole to show local natives, but it was never recognised. The type and only known specimen of *C. damarensis*, in the British Museum, was at one time

6. *Chrysochloris tenuis* Broom.

A single specimen from Port Nolloth district (15 miles inland) is tentatively referred to this species, the type of which is an incomplete skull without lower jaw or teeth from an owl casting (from Garies, in the South African Museum).

Colour above pale drabby seal-colour with a faint iridescent purplish wash: cheek markings buffy-white. Underparts pale drabby-buff; throat also buffy, not buff-white as in *Kamiesberg* specimens referred to *namaquensis*—some of which it otherwise closely resembles in colour.

The teeth of the Port Nolloth skull (No. 1860, in the Kaffrarian Museum) are much worn down, but, so far as can be judged, are considerably smaller than in the *Kamiesberg* series of *namaquensis*.

There are 40 teeth in all, whereas the type skull of *C. tenuis*, a smaller specimen without teeth, has sockets for only 36.

Golden Moles (excluding the essentially coastal *Eremitalpa*) occur inland from Port Nolloth in red sandveld clothed with scanty karoo scrub, but they are local if not actually scarce. A few *Chrysochloris* runways were also observed between Eenriet and Klipfontein.

Fresh workings may be traced by the cracked ground surface above the shallow tunnels. Golden Moles (in Namaqualand) often seem to travel above ground by night and to make short overland journeys. Presumably on such occasions they are preyed upon by owls.

Measurement Table of the Type Skull of Chrysochloris tenuis and of a Specimen collected near Port Nolloth (8th February 1937), provisionally referred to that Species.

Original number	Type (Garies)	1860 (Port Nolloth)
Sex	♀
Head and body	95
Hindfoot	11.25 mm.
Skull:		
Greatest length	20.5	20
Basal length	16	16
Greatest breadth	14.5 (approx. ?)	16.5
Greatest height	10.5	10.5
Interorbital breadth	6.5	6.5
Palate across posterior molars	7.3	8.5
Dental series: front of incisors to back of posterior molar	9.6	9.5 mm.

regarded as identical with *C. asiatica* (cf. W. L. Selater, Mamm. S. Africa, ii, p. 172); but that was before the discovery of allied species in Little Namaqualand. It is possible that *damarensis* and *namaquensis* (e.g.) may on comparison prove

(7. *Chrysochloris wintoni* Broom.)

Range: Garies-Port Nolloth?. Habitat: coastal sandveld.

The type from Port Nolloth (a skull and a skin in alc. No. 1917) is in the South African Museum. A second specimen (skin and skull), also from Port Nolloth, is in the Transvaal Museum.

Colour above pale sandy-drab, almost as pale as in *Eremitalpa*, but with pinkish-lilac iridescent reflections and shorter fur. (In the spirit specimen the iridescent reflections are a very brilliant green shot with violet.) The head is pale drabby-buff with no defined cheek markings.

Length of head and body (type), 80-90 mm.

At Kameelboom, between Garies and Hondeklip Bay, some Golden Mole runways were observed in soft whitish sand: these were often close to the base of comparatively large bushes and may have been the workings of *C. wintoni*. No very recent activity was observed (February).

8. *Eremitalpa granti* (Broom).

Hottentot: ĒSA TSURU; ĒSA DURÜB (Port Nolloth).

Specimens from Port Nolloth.

The type, one of four skulls from owl castings (in the South African Museum), came from near Garies, but the individuals to which these skulls belonged were quite probably captured by owls *within* the coastal sand-dune belt and carried farther inland.

The genus is perhaps the most specialized of the smaller *Chrysochloridae*: *Eremitalpa*, like *Cryptochloris*, is flattened and roundly

to be synonymous. Early collectors, before the importance of recording exact type localities was recognised, as often as not attached indefinite and misleading data to specimens—such as "Southern Africa," "Cape Colony," etc. "The Cape of Good Hope" on an old label might have stood for any part of what is now the Cape Province.

"Kaffraria," which to-day is a localized name for the territory between the Kei and Great Fish Rivers in the Eastern Cape Province, might have stood for any part of eastern or central South Africa, its original interpretation having been "Habitat of the Kaffirs." "Damaraland," again, might have been almost any part of South West Africa north of the Orange River.

The type of *Thallomys nigricauda* is labelled "Hountop River, Damaraland," but that river is in central Great Namaqualand.

The northern boundary of Great Namaqualand, as defined to-day, is approximately the Tropic of Capricorn.

oval in shape, which may be an adaptation for progress through very loose sand.

Fur unusually long and silky. In subadult specimens the colour above is a beautiful aluminium-grey, changing to sandy-buff with age. The tips of the hairs, especially on the hindquarters, shine like spun glass, but there is no coloured iridescence. In immature specimens there are indications of pale cheek markings: in adult examples the entire face is whitish. The underparts vary from buffy-whitish to pale rufous.

Dimensions of an adult male: H. & b. 88, Hf. 10.5 mm.

In Little Namaqualand *Eremitalpa granti* appears to be restricted in range to the coastal strip of white shifting sand which extends from the mouth of the Orange River southwards. It may possibly cross the Orange River into the south-western littoral of Great Namaqualand.

This "Silver" Mole is very plentiful around Port Nolloth from near the coast to about twelve miles inland. It does not seem to extend farther inland where the sandveld becomes level and relatively firm.

Eremitalpa makes runways in the wind-swept, undulating sand-dunes which resemble lightly buried hose-pipes: these twist about and can often be traced for fifty yards or more. The shallow tunnels presumably fall in shortly after they have been traversed. I do not think that the animals make a practice of going back on their tracks.

The very slightly raised tunnels are quite smooth above and do not show up conspicuously against the glaringly white surroundings; but they are easily identified and quite a feature where they occur.

The surface runways communicate with deeper excavations which descend several feet below ground: in this more solid stratum the animals lie up and presumably breed. They throw up no mounds.

Specimens were obtained by trenching along the furrows until the deeper excavations were discovered. Several were kept alive for short periods, and it was noted that they have the power of blowing themselves up like tiny balloons: when below ground they may, by this means, be able to conserve air until the surface can be reached on occasions when the fine sand falls in and blocks the tunnels.

There are occasional surface openings (which I think may be blow-holes) at irregular intervals wherever recent excavations occur. During the frequent high winds surface indications of all tunnels may be obliterated in a few minutes, the powdery sand being without cohesion.

Innumerable tracks of cats, genets, and foxes were observed in the

vicinity and along the lines of the runways, a possible indication that these moles frequently come to the surface and wander above ground: on such occasions they would fall an easy prey to four-footed and winged carnivores. When handled they do not attempt to bite, although in their struggles they show muscular strength.

It was of interest to discover that *Eremitalpa granti* is a *carnivorous* mole, its food consisting largely of various sand-burrowing species of anguine skinks. These small snake-like lizards, either legless or nearly so, slip through the loose sand like eels through water, and to capture them indicates corresponding agility on the part of the moles. No pregnant females were obtained (January-February).

FAMILY SORICIDAE.

9. *Crocidura martensii* Dobson.

Hottentot: XUÜ DURÜB (Kamiesberg).

Specimens from Witwater, Eselfontein, Platbakkies.

A Platbakkies specimen is more suffused with rufous than the others; otherwise the series is very uniform.

Habitat: rocky and stony situations.

10. *Myosorex varius varius* (Smuts).

Specimens from Eselfontein and Port Nolloth.

A specimen collected by C. H. B. Grant in 1903 from near Port Nolloth was noted by Oldfield Thomas at the time to be quite similar in colour to a series from the slopes of Table Mountain.*

Habitat (Eselfontein): fairly high grass near swamp vegetation.

Port Nolloth is an entirely waterless region, but perhaps the frequent damp mists and cool atmosphere occasioned by the Antarctic current render conditions suitable for the existence of *Myosorex varius*, an animal which normally favours damp situations.

FAMILY PTEROPIDAE.

(11. *Eidolon helvum helvum* (Kerr).)

There are two records of Fruit Bats from the barren coast of Little Namaqualand. Such obviously accidental visitors might either have been carried on ships or blown southwards by high winds.

* The type locality is Algoa Bay. The type, formerly in the Port Elizabeth Museum, has disappeared, but topotypes have since been procured, one of which is in the Kaffrarian Museum.

(1) "Captured at sea off Hondeklip Bay" (cf. W. L. Sclater, Mamm. S. Africa, ii, p. 109, 1901 = *Rousettus stramineus*). This specimen is still preserved in the South African Museum.

(2) From Port Nolloth: a Fruit Bat "with a wing span of 32 inches" (East London Dispatch, 19th May 1936).

A Fruit Bat reported to occur as a rarity near Upington may also be referable to this species.*

According to Mr. Weidner, "Fruit Bats" do not visit Goodhouse Citrus Estate.

FAMILY NYCTERIDAE.

12. *Nycteris capensis damarensis* Peters.

Hottentot (all insectivorous bats): SORE : TSI//GŪBES (Kamiesberg); SERTSE//GŪBES (Goodhouse); //OETSI//OEBES (Eenriet); //GŪBES (Port Nolloth).

Specimens from Garies, Goodhouse, Port Nolloth, and from Louisvale. Provisionally referred to *damarensis*; agreeing in colour and dimensions with series from South West Africa.

FAMILY RHINOLOPHIDAE.

13. *Rhinolophus capensis* Lichtenstein.

Specimens from Orrelgat Cave (25 miles east of Witwater), Paddagat, Leliefontein, Goodhouse.

14. *Rhinolophus denti denti* Thomas.

One specimen from Louisvale, about 20 miles west of Upington. Apparently the only record from the western Cape Province (south of the Orange River).

15. *Rhinolophus geoffroyi geoffroyi* A. Smith.

Two specimens from Leliefontein.

These specimens, matching *R. capensis* in colour, and in body, hind-foot and ear measurements, but with longer forearms and hindlegs, are tentatively referred to *R. geoffroyi*; they do not altogether agree with a series, referred to *R. auger* by Oldfield Thomas, from Karibib in South West Africa.

* There are very few other records of this tropical bat from the Cape Province: a specimen in the McGregor Museum came from Koegas on the Orange River (Griqualand West); another in the Port Elizabeth Museum is labelled "Bedford"; FitzSimons records "Steynsburg." [Editor: Durbanville, near Cape Town, 1941.]

(16. *Rhinolophus aethiops* Peters.)

Two specimens, referred by Thomas to this species, were collected by C. H. B. Grant at Klipfontein in 1903.

FAMILY VESPERTILIONIDAE.

17. *Cistugo seabrae* Thomas.

Specimens from Goodhouse.

The most plentiful bat around Goodhouse Citrus Estate.

The wing glands are easily seen in fresh specimens; their shape varies to some extent. In several instances there are two glands close together on either side.

Cistugo seabrae and *Platymops haagneri* come out at the same time, soon after sundown. Although otherwise very similar on the wing, *C. seabrae* is neither so strong nor erratic a flyer as *Eptesicus capensis*. It perhaps resembles more closely a small *Pipistrellus*. On first appearing its flight is comparatively steady and direct, but with approaching dusk it descends and circles low around trees and bushes. At Goodhouse *Cistugo* and *Platymops* have the same habit of fluttering in the deep shadow of orange trees and snapping small insects from the leaves.

New to the Cape Province.*

(18. *Miniopterus natalensis* subsp.)

A Long-winged Bat, referred at the time to *M. schreibersi*, was collected by C. H. B. Grant in 1903.

19. *Eptesicus capensis capensis* (A. Smith).

Specimens from Eselfontein and from Louisvale.

In Little Namaqualand only observed on the Kamiesberg where a few specimens were shot whilst circling over a small pool of water.

20. *Eptesicus megalurus pallidior* subsp. n.

Specimens from Goodhouse.

A relatively large buff-coloured bat with cranial characters as in *Eptesicus*; agreeing with the type of *Eptesicus megalurus* in skull and skin dimensions, but not altogether in colour.

* The only examples of this bat previously known were the type from Mossamedes, and two specimens from Berseba (British and Kaffrarian Museums' Expedition to Great Namaqualand).

General colour above and on sides of neck pale rufous-buff: under parts drabby buff-white: all hairs above and below ashy-slate at base. Ears dusky brown: membranes horn-brown, rather translucent.

These Goodhouse specimens agree with Temminck's description of *megalurus* in that the hair is long, smooth, silky, and bicoloured throughout; but in typical *melanurus* the hair in front of the neck and abdomen is described as "cedar-brown" as far as the tip; on the flanks "dove-coloured," and on the pubic region quite white from base to tip.

Type: an adult female (Coll. No. 1157): H. & b. 74, Tl. 48, Hf. (s.u.) 11, Ear 19 mm.

A weak flyer, coming out at late dusk, about half an hour after *Cistugo* and *Platymops*. Apparently not plentiful around Goodhouse, about half a dozen observed in all.

The specimens collected were shot whilst "planing" very slowly in wide circles around a cattle kraal, to which they were attracted by swarms of flies.

These bats have a wide and broad wing span and, owing to similarity in size, were at first mistaken in flight for *Scotophilus*.

FAMILY MOLOSSIDAE.

21. *Platymops* * *haagneri* *haagneri* Roberts.

Specimens from Goodhouse.

This series shows the following range of measurements: H. & b. 54-60, Tl. 36-41, Hf. 7.5-8.5, Ear 15.5-16 mm.

Plentiful around Goodhouse; a few individuals (identified in flight) were afterwards observed at Eenriet, about 40 miles south of Goodhouse. On first appearing these bats fly rather high, sometimes out of gunshot; later, they descend and circle around orange and other shade trees.

Genus new to the Cape Province.

* Miss St. Leger informs me that on a re-examination of the type skull of *Platymops macmillani*, the genotype of *Platymops*, a minute premolar 2 was found to be present on one side. In consequence it would seem that the subgenus *Sauromys* (of which *haagneri* is the genotype), previously thought to be distinguishable from *Platymops* by the presence of a minute premolar 2, is hardly necessary. *Platymops haagneri* was only known previously from the type (in alc.) from Keetmanshoop (Transvaal Museum); a second specimen (practically topotypical, now in the British Museum) from Brukaros Mountain (British and Kafrarian Museums' Great Namaqualand Expedition); and a third recently collected by Dr. Karl Jordan at Otjosongombe (Waterberg, S.W. Africa).

22. *Nyctinomus bocagei* Seabra.

Specimens from Louisvale (near Upington).

Found roosting inside hollow trees.

FAMILY CERCOPITHECIDAE.

23. *Cercopithecus aethiops pygerythrus* (F. Cuvier).

Hottentot: //OREGE : B (Goodhouse, Eenriet); //ORE/NĒ : RAB
(Kamiesberg).

Two specimens from Goodhouse; others from Louisvale.

Vervets from the lower Orange River and from the Eastern Cape Province appear to me to be indistinguishable. These western examples from Goodhouse, and from Louisvale, about 200 miles farther east, are probably referable to *C. aethiops marjoriae* Bradfield (Description of New Races of Kalahari Birds and Mammals, p. 2, 26th September 1935), typically from Zoetvlei near Kuruman, and stated to differ from *C. aethiops pygerythrus* in being "a shade paler."

In my opinion *marjoriae* must be regarded as a synonym of *pygerythrus*.

In Little Namaqualand Vervet Monkeys are restricted in range to the banks of the Orange River; they are not very plentiful near Goodhouse, which is probably due to the narrowness there of the river tree belt. They undoubtedly wander considerable distances along the banks of the Orange River.

Vervets feed largely upon insects, and also to some extent upon the nestlings and eggs of small birds. Mr. Weidner (Goodhouse Estate) believes that their insectivorous diet more than compensates the citrus farmer for the relatively small amount of fruit taken.

24. *Papio comatus comatus* E. Geoffroy.

Hottentot: /NĒ : RAB (Goodhouse, Port Nolloth, Kamiesberg);
/Ē : RAB (Eenriet).

Specimens from Witwater, Eselfontein, Eenriet.

In 1921 baboons were observed close to the Aughrabies Falls of the Orange River.

Little Namaqua baboons are intermediate in coloration between paler specimens from the Eastern Cape Province and darker specimens from Damaraland and the Kaokoveld.

FAMILY MUSTELIDAE.

25. *Ictonyx orangiae orangiae* Roberts.

Hottentot: /GA : MIROB (Goodhouse); /A : MIROB (Eenriet);
!O/E : B (Kamiesberg).

Specimens from Witwater, Platbakkies, Eselfontein, Eenriet, Port Nolloth, Kameelboom, and from Louisvale and Upington.

A very uniform series; Little Namaqualand specimens are presumably referable to *I. organiae arenarius*.

Generally plentiful throughout Little Namaqualand.

26. *Mellivora capensis capensis* (Schreber).

Hottentot: /HAREBA, /HEIDOS (Goodhouse); /Ā/HŌAS (Eenriet);
/HAREB (Kamiesberg).

Specimens from Witwater, Eenriet, and from near Upington.

FAMILY LUTRIDAE.

27. *Aonyx capensis capensis* (Schinz).

In 1921 a few tracks of *Aonyx capensis* were observed along the banks of the Orange River near Louisvale. I believe, however, that *Lutra maculicollis* is the more common Otter in the west-flowing rivers of the Cape Province.

28. *Lutra maculicollis maculicollis* * Lichtenstein.

Hottentot: //GAM/HĀ/HEI : DOB (Goodhouse).

Specimens from Louisvale.

According to Hottentots at Goodhouse, Otters are scarce in the lower Orange River. No tracks of either species were observed below the Aughrabies Falls.

FAMILY CANIDAE.

(29. *Lycaon pictus venaticus* (Burchell).)

Hottentot: ARIB (Eenriet).†

Extinct in Little Namaqualand.

* An examination of material in the Kaffrarian Museum from the Zambesi, Okavango, and various parts of the Union has convinced me that *Lutra m. chobiensis* is inseparable from typical *maculicollis*.

† ARIB correctly refers to the Domestic Dog; Nama Hottentot names for the Wild Dog in South West Africa are: !GAUB, !GOUB, or ≠HOU ARIB. Wild

30. *Otocyon megalotis megalotis* (Desmarest).

Hottentot: /AMA/AĪERA (Eenriet); //AB/KIRAB (Kamiesberg);
//AB (Goodhouse); /HOÃS, /NOÃS (H. J. Wikar).

A single specimen from Port Nolloth: representative of the typical Cape race. *

Generally scarce; presumably most plentiful along the coastal sandplains. Food: insects (including, largely, White Ants), small rodents, lizards, etc. A harmless and useful animal, much persecuted by kaross traders in Bechuanaland.

31. *Canis (Thos) mesomelas mesomelas* (Schreber).

Hottentot: /KIRAB (Goodhouse, Kamiesberg); /AĪERA (Eenriet).

Specimens from Eselfontein, Platbakkies, and from the Aughrabies Falls. Generally distributed: comparatively plentiful in the Kamiesberg. Owing to much trapping, Jackals are as wary as elsewhere in the Cape Province. Eselfontein specimens (Kamiesberg cloud region) are as richly coloured as average examples from the Eastern Cape Province; skins from the arid plains farther east (Platbakkies), although a shade paler, are not so pallid as *C. mesomelas arenarum* from South West Africa.

32. *Vulpes chama* (A. Smith).

Hottentot: /KAMAB (Goodhouse, Kamiesberg); /AMA (Eenriet).

Specimens from Port Nolloth, near Kamieskroon (?), and from near Upington.

Vulpes chama was described from "Little Namaqualand": I propose to fix Port Nolloth as the type locality.

Widely distributed throughout the plains of Little Namaqualand: said to be plentiful inland from Port Nolloth and elsewhere along the coast. Apparently not occurring on the Kamiesberg.

Dogs are no longer resident in any part of the Cape Province, although on extremely rare occasions small hunting parties still wander down from the north. The most recent record for the Cape Province appears to be that of two specimens, now in the Kaffrarian Museum, which were shot out of a troop of four or five at Gray's Halt, Amabele, near Kei Road, on 16th July 1925, by Newey Bros.

* Other specimens of *Otocyon* in the Kaffrarian Museum from South West Africa are referable to *O. megalotis steinhardti*.

FAMILY VIVERRIDAE.

33. *Genetta genetta felina* (Thunberg).

Hottentot: //AR \bar{O} B (Goodhouse); /GARUB//AR \bar{O} B (Kamiesberg);
//KAR \bar{O} B (Eenriet).

Specimens from Witwater, Goodhouse, Kameelboom, and from Louisvale, Upington, and the Aughrabies Falls.

Generally distributed throughout Little Namaqualand. Not uncommon; extending to the coast (Port Nolloth).

34. *Atilax paludinosus paludinosus* (G. Cuvier).

Hottentot: GEI \neq N \bar{U} E : B (Goodhouse).

One specimen from Louisvale.

Occurs along the lower Orange River, but apparently scarce.

35. *Cynictis penicillata pallidior* Thomas and Schwann.

Hottentot: / \bar{E} \bar{I} /AI \neq \bar{A} (Eenriet); /AWA/E : B (Kamiesberg,
Port Nolloth); χ ARU (Goodhouse).

Specimens from Eenriet, and from Louisvale.

Eenriet is 6 miles from Klipfontein, the type locality for *C. p. pallidior*. Much more local than *Suricata* in Little Namaqualand, but not uncommon where it occurs. Not found on the Kamiesberg.

36. *Myonax ratlamuchi upingtoni* Shortridge.

Hottentot: /AWA/GA : MIROB (Goodhouse).

Specimens from Louisvale and Upington.

Said to occur sparsely along the lower Orange River, but apparently much less plentiful than above the Aughrabies Falls.*

37. *Myonax pulverulentus ruddi* (Thomas).

Hottentot: \neq N \bar{U} /E : B (Goodhouse); /E : B (Kamiesberg);
 \neq H \bar{U} /E : B (Eenriet).

Specimens from Witwater, Eselfontein, Eenriet, Port Nolloth, Kameelboom, Steinkopf, Goodhouse.†

* "A beautiful orange-coloured Martin," undoubtedly referable to *Myonax ratlamuchi*, was recorded by Alexander (c. 1838) from the lower Fish River in Great Namaqualand.

† Austin Roberts informs me that he has recently obtained a specimen of this mongoose from the north of Aus in S.W. Great Namaqualand.

M. pulverulentus (subsp. inc.) was observed on several occasions near Louisvale (south bank of the Orange River) in 1921.

Eenriet is 6 miles from Klipfontein, the type locality for *M. p. ruddi*.

A characteristic of this subspecies is its extreme seasonal change of coloration, which is without parallel among South African mammals. All specimens in Grant's original series (April-June 1903) are in full winter coat: in these the lower part of the back, feet, and tail-tip are black; the remainder of the tail hairs tipped with bright russet, contrasting with the general greyish grizzling of the body.

A coloured plate in the P.Z.S. (1904, vol. i, pl. vi) gives a rather misleading idea of the coloration of the typical set which I have examined at the British Museum; in this plate the body-colour is too olivaceous, the tail too yellow, and the black markings are not sufficiently pronounced.

The present large and much more variable series, collected between October and February (summer months), are for the most part less richly coloured; the feet and extreme tail-tip are black as in the typical set, but, in the majority of the skins, the dark dorsal patch is either indistinct or absent. There are, however, several still in partial winter coat, as indicated by the black dorsal patch being well-defined. In one example only is the tail as bushy and brightly coloured as in Grant's winter series.

Plentiful in rocky situations throughout Little Namaqualand; extending as far west as the coastal hills 15 miles inland from Port Nolloth.

38. *Suricata suricatta namaquensis* Thomas and Schwann.

Hottentot: //KĀ-NĪ/AI ≠ Ā (Eenriet); XARAB (Goodhouse). (Grant's "Hottentot" name 'HCRYKY for *Suricata* and *Cynictis* is presumably a modification of GRAAITJIE, a local Afrikaans name.)

Specimens from Witwater, Eselfontein, Eenriet, Port Nolloth, Steinkopf.

In 1921 a "Suricat" colony existed near Upington (south bank of the Orange River).*

Klipfontein, the type locality for *S. suricatta namaquensis*, is 6 miles from Eenriet.

Fairly widely distributed in Little Namaqualand; warrens usually large but not very numerous. Occurring on the highest plateaux of the Kamiesberg, and (at Port Nolloth) within a mile or two of the

* Reported also from Kenhardt District.

coast. Kamiesberg specimens are slightly more suffused with rufous than examples from the arid plains of Little Namaqualand.

FAMILY PROTELIDAE.

39. *Proteles cristatus canescens* Shortridge.

Hottentot: \neq AM \neq ĒRA (Eenriet); /GI : B (Goodhouse); /GI (Kamiesberg); NU/HAB, NUAAP (H. J. Wikar).

'Tkaboek Bushmen: 'NAAS, /HAS (H. J. Wikar).

Afrikaans: ERDWOLF or MAANHAAR JAKKALS.

High Dutch: AARDWOLF.

Specimens from Witwater, Eselfontein, Eenriet, Port Nolloth.

Fairly plentiful in Little Namaqualand, both on the plains and among the mountains. Aardwolves scoop out small hollows in the sides of white-ant hills, but do not tear down the mounds in the same manner as Aardvarks. They are mainly nocturnal, but sometimes wander about by day.

An Aardwolf at bay erects its dorsal crest like a Civet.

The stomachs of all specimens were packed with white ants and coarse grit in about equal proportions; the grit being presumably licked up with the ants. Newspaper controversy as to whether or no the Aardwolf habitually attacks sheep and lambs is something of a "hardy annual" in South Africa. Whilst the canines and incisors are normal in shape and size, the widely separated and almost rudimentary molars indicate their unsuitability for masticating flesh. There is no reason, however, why occasional individuals should not become "rogues." Abnormal habits in many animals happen sporadically, and as such should be dealt with: but it would be an error of judgment to advocate the destruction of all Aardwolves in the face of existing evidence of their normally insectivorous diet.

A short "baculum." The tongue is covered with slightly raised fleshy discs.

FAMILY HYAENIDAE.

(40. *Crocota crocuta maculata* (Thunberg).)

Hottentot: \neq NUBE \neq HIRAS (Goodhouse).

Extinct in Little Namaqualand. Alexander records having met with "Hyaenas" in this region: Hottentot names indicate the former existence of both species.*

* There is a mounted Spotted Hyaena in the Kaffrarian Museum, referable to *H. c. maculata*, with "Cape Colony" on the original label.

(41. *Hyaena brunnea brunnea* Thunberg.)

Hottentot: ≠HIRAS (Goodhouse).

Extinct in Little Namaqualand. The Brown Hyaena probably survived longer in Little Namaqualand than the Spotted species.*

FAMILY FELIDAE.

(42. *Acinonyx jubatus jubatus* (Schreber).)

Hottentot: !ARŪB (Kamiesberg, Goodhouse); !ARŪ (Eenriet).

A few Cheetah are said still to occur in Bushmanland and Kenhardt District: according to Hottentots around Goodhouse they are very nearly extinct; Mr. Weidner (1937) believes that there may be one or two in the Richtersveld and along the Orange River opposite Goodhouse. These are without doubt the only regions south of or near the Orange River in which these animals survive, and even there they have almost disappeared. Formerly Cheetah were said to have preyed upon Ostriches in the plains east of the Kamiesberg.

43. *Caracal caracal caracal* (Schreber).

Hottentot: /ABA/HŌAB (Goodhouse, Kamiesberg);
/GAWA/HŌAB (Eenriet).

One specimen from near Springbok.

Generally distributed throughout Little Namaqualand: rare in the Kamiesberg.

44. *Felis lybica cafra* Desmarest.

Hottentot: /HOAB (Kamiesberg, Goodhouse); /HAB (Port Nolloth);
/HŌ/HŌUB (Eenriet).

Specimens from Witwater, Eselfontein, Goodhouse, Eenriet, and from Louisvale and near Upington.

Plentiful throughout Little Namaqualand; extending to the coast (Port Nolloth).

45. *Felis lybica namaquana* Thomas.

One specimen from Platbakkies.

Matching pallid examples from Great Namaqualand and elsewhere in the southern parts of South West Africa. This specimen from

* Migrants are still recorded from the Eastern Cape Province at rare intervals: there is an old mounted Brown Hyaena in the Kaffrarian Museum labelled "Pirie Forest."

the Bushmanland border has only dusky indications of leg-bars, thus contrasting with *F. l. cafra* from the Kamiesberg and other parts of Little Namaqualand.

(46. *Panthera leo melanochaitus* (Hamilton Smith).)

Hottentot: XAMI (Kamiesberg); XAM (Goodhouse).

There are Hottentot traditions of the former occurrence of the Cape Lion in Little Namaqualand. The English translation of "Kamiesberg" is "Lion Mountain." J. E. Alexander (c. 1835) shot a lion on the south bank of the lower Orange River near Karahas Ford, and wrote: "*It is not altogether safe to traverse along the banks of the Gariep; Lions are to be met with.*" On his map, "*Plains with Zebra and Lions,*" is inscribed on the north bank of the Orange (Gariep) River about opposite to where Goodhouse now stands (An Expedition of Discovery into the Interior of Africa).

47. *Panthera pardus melanotica* Gunther.

Hottentot: /GARUB (Kamiesberg, Goodhouse); /ARUB (Eenriet).

Two specimens, (*a*) from Norap (Rooifontein, north of Leliefontein in the Kamiesberg), and (*b*) from about 60 miles north of Upington.*

The Norap specimen, a flat skin, presented by W. M. Crampton, was shot in 1912: a second Kamiesberg specimen, the skin of a half-grown animal, shot about 1926, was examined at Leliefontein Hottentot Mission.

Leopards are no longer resident on the Kamiesberg, but they still occur sparsely among the mountains along the lower Orange River Valley.

FAMILY OTARIIDAE.

(48. *Arctocephalus pusillus* (Schreber).

Hottentot: HOERĪ XAM (Eenriet); /AIK (Port Nolloth).†

The Cape Sea Lion breeds on small islands off the coast of Little Namaqualand. Alexander mentions a "Seal Island" between the mouths of the Gariep (Orange) and Kowsie (Buffels) Rivers.

* The Upington (Gordonia) specimen was referred by Oldfield Thomas to *Panthera pardus shortridgei*.

† /KHOAP is a Hottentot name for a whale.

FAMILY MANIDAE.

(49. *Smutsia temminckii* (Smuts).)

The skin of a Pangolin from near Upington was examined in 1921.*
Unknown in Little Namaqualand.

FAMILY ORYCTEROPODIDAE.

50. *Orycteropus afer afer* (Pallas).

Hottentot: /KUBUS (Goodhouse); !OA/KUBUB (Kamiesberg).

Afrikaans: ERDVARK. High Dutch: AARDVARK.

One specimen from Eenriet.

This subadult specimen differs from an immature Kaffrarian skin in its generally darker body colour and in the rump and dorsal part of the back being further darkened by a profuse admixture of slaty-black hairs, these parts, however, not being so dark as the normally blackish thighs and shoulders. The tail is creamy-white (washed with rufous below), contrasting with the dark rump. The tail of the Kaffrarian specimen is pale greyish isabelline, not markedly paler than the general body colour. The Eenriet specimen approaches to some extent *O. afer albicaudus*; but the tail is not "almost pure white" terminally, as in a typical specimen of that race from Sandfontein (Gobabis District) in South West Africa.

Sparsely but widely distributed in Little Namaqualand. Said not to occur actually on the Kamiesberg, but a few burrows were observed around Platbakkies, about 20 miles east of those mountains.

FAMILY LEPORIDAE.

51. *Lepus capensis granti* Thomas and Schwann.

Hottentot: !ŌAS (Eenriet); /KARAR (Goodhouse).

Specimens from Eselfontein, Eenriet, Port Nolloth. Port Nolloth specimens are topotypical.

Widely distributed throughout Little Namaqualand; ascending to the highest plateaux of the Kamiesberg, being fairly plentiful around Leliefontein, although outnumbered there by *L. saxatilis megalotis*. Most numerous in the coastal sand plains and in open karooveld.

* There is a second Cape Province record from Prieska, farther east along the Orange River; and a third from Colesberg—the only record I know of from the south of the Orange River.

As long ago as 1835 Alexander wrote: "There are plenty of hares at the Gariep (Orange) River Mouth."

Lepus capensis is a more wary animal than *L. saxatilis*, but it may be coursed successfully with dogs. It is less attracted by cultivation than *Lepus saxatilis* and avoids populated areas.

The white frontal spot (Afrikaans, KOHL) is frequently present, but is seldom so conspicuous as in *L. saxatilis*.

52. *Lepus saxatilis megalotis* Thomas and Schwann.

Hottentot: !KHAERAB (Goodhouse); !KHAIRA (Eenriet);

XAXARIT (Kamiesberg).

Afrikaans: RIBBOKHAAS, KOHLHAAS.

Specimens from Witwater, Eselfontein. Klipfontein, near Eenriet, is the type locality.

Generally distributed in rocky country; particularly plentiful on the Kamiesberg. Seldom penetrating far into the plains. Attracted by cultivation, cattle kraals, and Hottentot villages.

53. *Lepus saxatilis aurantii* Thomas and Hinton.

Specimens (type and co-types) from Louisvale.*

Locally plentiful; attracted by cultivation (lucerne fields, etc.).

54. *Pronolagus crassicaudatus rupestris* (A. Smith).

One specimen from Platbakkies; others from Swartkop (near Upington), south bank of Orange River.

On receipt of a "summer" series of *Pronolagus* from Swartkop, Oldfield Thomas noted that the specimens were more suffused with rufous than Grant's "winter" examples from Little Namaqualand, but, believing this to be due to season, he concluded *melanurus*, previously assigned by himself and Schwann to Little Namaqualand specimens, to be synonymous with *rupestris*. A "summer" series from Little Namaqualand now shows that there is no such seasonal change, and, in consequence, I believe that *rupestris* and *melanurus* should be regarded as distinct races.

Pronolagus crassicaudatus rupestris (from Swartkop): general colour above sandy-rufous, individual hairs mostly tipped with buffy white, the general effect being grizzled rufous and white—

* Austin Roberts has recently recorded *L. s. aurantii* from the south-west of Rehoboth (Great Namaqualand). Specimens from Griqualand West appear also to be referable to this subspecies.

except on the lower part of the back where there is a slightly darker shade, due to an admixture of hairs blackish at their extreme tips; base of hairs uniformly pale rufous to the roots (as opposed to bluish-slate in *melanurus*). Fore and hind feet pale rufous, the hairs markedly tipped with whitish.

The specimen from Platbakkies (20 miles east of the Kamiesberg, on the western edge of the Bushmanland Highveld) intergrades to some extent with both races; in external coloration it almost exactly matches *rupestris* from Swartkop, but the base of the hairs is bluish-slate as in *melanurus*.*

55. *Pronolagus crassicaudatus melanurus* (Ruppell).

Hottentot: !ŨE!ŦAS (Eenriet); TSŦARUS (Goodhouse);
'TWIGI (Kamiesberg).

Specimens from Witwater, Eselfontein, Platbakkies, Eenriet.

Pronolagus crassicaudatus melanurus: general colour above drabby-brown, markedly washed with rufous on the neck, rump, and limbs only. Hairs on back and sides buffy-white subterminally, tipped with black; the general effect being grizzled drabby and black; fore and hind feet rufous-buff without defined whitish tips to the hairs. Base of hairs bluish-slate on rump, shading to whitish on shoulders.

With regard to *Pronolagus* material from Little Namaqualand and the middle Orange River, I propose to fix Eenriet (inland from Goodhouse, lower Orange River, below the Aughrabies Falls), Little Namaqualand, as the type locality for *Pronolagus crassicaudatus melanurus*; and Swartkop (near Uppington, middle Orange River (south bank), above the Aughrabies Falls) as the type locality for *Pronolagus crassicaudatus rupestris*.

Series in the Kaffrarian Museum from these regions represent two well-defined colour forms, and I consider that the status of the darker (coastal and subcoastal) *melanurus* and the paler (inland highveld) *rupestris* might thus be recognised.

The two races appear to meet or intergrade on the western edge of the Bushmanland Highveld (*e.g.* Platbakkies).

"Red Hares" are plentiful in rocky situations throughout Little Namaqualand. On the Kamiesberg they are extremely abundant at all altitudes and seem to be less shy than in most other regions.

* Specimens from Great Brukaros Mountain (Great Namaqualand) resemble closely Swartkop examples, except for having a somewhat more profuse admixture of black-tipped hairs on the back; these were not distinguished from Swartkop material by Oldfield Thomas.

Although for the most part nocturnal, in cool, cloudy weather they sometimes come out to feed by day, and in the early mornings and late afternoons may be found on almost any patch of outcrop. Flat ledges of rock and level patches of short grass on hillsides are often covered with accumulated droppings. These hares are not attracted by cultivation; they are essentially rock-dwellers, and feed upon mountain grasses and herbs. The meat has a slight aromatic flavour.

The normally dark foot-pads in Eenriet specimens were invariably whitened by powdered mica.

FAMILY SCIURIDAE.

56. *Geosciurus inauris namaquensis* (Lichtenstein).

Hottentot: !KAËS ≠ NAB (Goodhouse); /AI DURÜB (Eenriet).

Specimens from Swartkop, Louisvale, Aughrabies Falls.

No record was obtained of the occurrence of *Geosciurus* within the borders of Little Namaqualand, but in the north it may extend as far west as Pella. Well known to Hottentots around Goodhouse, but said not to occur so far west along the south bank of the Orange River.

The type locality for *G. inauris namaquensis* is Great Namaqualand west of the Fish River.*

FAMILY MUSCARDINIDAE.

57. *Gliriscus rupicola australis* Shortridge.

Hottentot: DANÜ : DURÜB (Eenriet); !ONIS (Goodhouse).

Specimens from Eenriet and Port Nolloth.

Nocturnal; a rock dweller; apparently not plentiful.

The latitude of Eenriet may be approximately the southern limit of the range of *Gliriscus*. The genus overlaps there with *Graphiurus* (collected by Grant at Klipfontein, 6 miles from Eenriet) which itself may not extend farther north. The specimen from Port Nolloth, where there are no rocks, was caught in a timber yard close to the harbour and might have been carried there by goods train from

* A specimen with worn fur from Berseba (Great Namaqualand) was at first referred by Oldfield Thomas to *Geosciurus princeps* on skull characters; but the writer afterwards stated that there must have been an accidental interchange of skull labels between this and a Karabib specimen. I am convinced that Thomas was correct and therefore suggest that Berseba, in central Great Namaqualand, about 10 miles west of the Fish River—a locality in which *Geosciurus* is known to occur—be fixed as a definite type locality for *G. inauris namaquensis*.

up-country. Dormice are said also to occur in the Orange River Valley (around Goodhouse, etc.).

Genus new to the Cape Province.

58. *Graphiurus ocularis ocularis* (A. Smith).

Hottentot: NAMTAP (Eenriet) *; /ON : DURÜB (Kamiesberg).

Specimens from Witwater, Eselfontein.

Grant collected two specimens at Klipfontein in 1903, a locality close to Eenriet where *Gliriscus* occurs.

The present Kamiesberg series has been compared with Eastern Cape Province material; there is not much difference, except that in the Namaqualand examples the black ocular markings are perhaps somewhat wider, and in its forward extension the ocular streak entirely surrounds the roots of the mystacial vibrissae; forming a band which averages 7-8 mm. in width, extending from the upper lip to the lower margin of the ear—the forearm being also to some extent suffused with black above. Namaqualand specimens of *Graphiurus* can be regarded as typical of *G. ocularis elegans*; and the Kamiesberg (Eselfontein), visited by Alexander, may be fixed as its type locality (cf. Mamm. S.W. Africa, Shortridge, vol. i, p. 216, footnote by Oldfield Thomas). In my opinion, however, *elegans* is hardly separable from typical *ocularis*, although it is quite as good a race as plenty of other named subspecies of South African mammals.

The nicotine-coloured stains on the face, throat, and shoulders, so characteristic of South African Dormice, are as a rule particularly manifest in adults of *Graphiurus*. The skull is flattened, almost as much as in *Gliriscus*, which suggests similar crevice-dwelling habits. There is a short "baculum." Plentiful in the Kamiesberg.

Although doubtless to some extent arboreal where there are trees, *Graphiurus ocularis* is essentially a rock-dweller in Little Namaqualand and throughout the greater part of its range, where it is similar to *Gliriscus* in choice of habitat. It is strictly nocturnal.

At Eselfontein two specimens were trapped in an old stone wall; others were found in rocky cliffs containing horizontal fissures and amongst natural pylons of large boulders.

A local Afrikaans name for *Graphiurus* is "HUENINGMUIS," owing to the fact that it is fond of honey and, like European Dormice, said to enter bees' nests in search of it. It is also carnivorous when

* This name is used by Afrikaans-speaking farmers in the Cedarberg, Clanwilliam, district.—[Ed.] See p. 88.

opportunity offers, and, like the Fiscal Shrike in respect of smaller birds, will prey upon rodents and other smaller vertebrates less powerful than itself. In the Kamiesberg, small mammals caught in traps were often found with the heads partly eaten off and brains extracted, presumably by these Dormice. In captivity, other small rodents placed in the same cage are at once savagely attacked. *Graphiurus* is said to find its way occasionally into houses and to drink milk.

FAMILY CRICETIDAE.

59. *Desmodillus auricularis auricularis* (A. Smith).

Hottentot: /GAWA : DURÜB (Eenriet); /AWA : DURÜB
(Goodhouse).

Specimens from Witwater, Platbakkies, Goodhouse, Eenriet, Port Nolloth, Kameelboom, and from Louisvale and Aughrabies Falls.

Two specimens from Witwater are topotypical, the type, discovered and described by Sir Andrew Smith, having come from the Kamiesberg. There is considerable individual colour variation in the Namaqualand and Louisvale series: the four most vividly orange-chestnut Namaqua specimens come from four separate localities—(1) Witwater (♂), (2) Eenriet (♂), (3) Platbakkies (♂), (4) Goodhouse (♀).*

Habitat: level plains sparsely clothed with low karoo scrub.

The Short-eared Gerbil ascends the Kamiesberg to Witwater Plateau, but was not found as high up as Eselfontein.

Desmodillus (as opposed to *Taterona* and *Gerbillus*) is not communal: it is quarrelsome in captivity, and the adults soon start killing and partly devouring the weaker of their own species and other small rodents.

60. *Gerbillus (Gerbillus) paeba broomi* Thomas.†

Specimens from Witwater, Platbakkies, Goodhouse, Eenriet, Port Nolloth, Kameelboom.

The type locality is Port Nolloth.

* There is so much individual colour variation that I do not think *Desmodillus auricularis pudicus* is distinguishable from the typical subspecies.

† *Gerbillurus*: subgen. n.

I have long been of opinion that the *Dipodillus*-like *Gerbillus vallinus* should be distinguished from true *Gerbillus* (as represented by *paeba*, *swalius*, etc.).

Gerbillurus differs from *Gerbillus* in its long and relatively heavily tufted tail, which in some examples is half as long again as the head and body. The partially bare soles, and the triangular skull with inflated bullae (very much as in *Desmodillus*)

This series is extremely variable in size and colour; some being clear orange-chestnut above from nose to tail-tip: others are grizzled drabby brown, with tails darkened above by a profuse admixture of black hairs. The majority show intermediate coloration. Range of colour matching almost exactly that of *Desmodillus*. Several specimens from Goodhouse had markedly incrassated tails, although this is not very apparent in the dry skins. Widely distributed, especially in the open plains: perhaps most plentiful in the coastal sandveld. Occurs in the Kamiesberg around Witwater, but not met with on the higher Eselfontein Plateau.

61. *Taterona brantsii namaquensis* Shortridge.

Specimens from Goodhouse.

Trapped in high grass along the edges of water-furrows bordering irrigated land on Goodhouse Estate.

Apparently not plentiful: no burrows observed.

Genus new to Little Namaqualand.

Oldfield Thomas (P.Z.S., 1927, pt. 2, p. 386) wrote: "If we are to try to get our taxonomic arrangement and nomenclature to give some sort of idea as to the course of evolution in the different animals, . . . , we must I believe take the bold step of recognising animals as distinct if of obviously separate and independent origin, even if to our eyes they look quite the same. We should thus be recognising the locality as an essential part of the animals' individuality."

A difficulty in distinguishing animals subspecifically on a purely geographical basis without close personal knowledge of the country, on the supposition that they are of independent origin, is that it is not often possible to determine from the study of an ordinary map whether two presumed faunal regions are not in reality connected by a strip of similar country not indicated on the map. At the same time, when two races from distant localities, known to be disconnected, resemble one another closely, slight but consistent differences are of greater interest than more readily distinguishable but intergrading characteristics in races inhabiting adjoining areas. For this reason I had no hesitation in describing *Taterona brantsii namaquensis* from the south bank of the lower Orange River on have already been remarked upon by Thomas and Hinton (P.Z.S., pt. 1, p. 235, 1925).

Genotype (in the Kaffrarian Museum): *Gerbillus (Gerbillurus) vallinus*; No. 578, adult ♂, H. & b. 110, Tl. 154, Hf. 30, Ear 13.5 mm., from Berseba, Great Namaqualand, 6th September 1923.

account of the distance of its habitat from that of any other known race of *brantsii*. From my knowledge of south-western Africa I am satisfied that vast tracts of country, uninhabited by any species of *Taterona*, separate *T. brantsii namaquensis* from *T. brantsii perpallida*,* the Bechuana race which *namaquensis* most closely resembles. Northwards from Goodhouse, on the inland (hardveld) plateaux of Great Namaqualand, the genus appears to be unrepresented: eastwards, along the Orange River (above the Aughrabies Falls) *T. miliaria*, a member of the *lobengulæ* group, occurs.

62. *Taterona miliaria miliaria* (Wroughton).

Specimens from Swartkop and Louisvale (south bank of Orange River).

This series was originally referred incorrectly by Thomas and Hinton (P.Z.S., 1923) to *T. miliaria stellæ* (= *T. lobengulæ griquæ*?). *T. miliaria* belongs to the *lobengulæ* group; there being two pairs of pectoral mammae.

Plentiful; not found in large warrens in this region. Attracted by cultivation, but also occurring along the beds of dry water-courses. The relatively large and easily seen burrows are often excavated close to the thick scrubby bushes which fringe these water-courses.

63. *Myotomys unisulcatus broomi* (Thomas).

Hottentot: ≠ HŪ : DURÜB (Eenriet); ≠ NŪ : DURÜB
(Goodhouse).

Specimens from Witwater, Eselfontein, Eenriet, Port Nolloth, Kameelboom. Port Nolloth is the type locality.

Widely distributed in Little Namaqualand and as a rule extremely plentiful; ranging from the highest peaks of the Kamiesberg (near the summit of Eselkop) to the sea coast (hardly above tide level at

* In 1927 (P.Z.S.) Oldfield Thomas provisionally referred a large series of *Taterona* from Gobabis District to *T. schinzi*, but mentioned (in litt.) at the time that the South West African Gerbil material had not been carefully examined. Since then about half of them have been referred by St. Leger (28th November 1935—in litt.) to *T. brantsii perpallida*. Owing to this delay the occurrence of *T. b. perpallida* in the eastern and north-eastern parts of S.W. Africa was not recorded by me in The Mammals of South West Africa. *T. schinzi* and *T. b. perpallida* are now known to occur side by side in Gobabis District, and they both extend northwards, although in the extreme north *perpallida* (a few collected at Ssannukannu village, about 10 miles south of the Okavango) is far outnumbered by *schinzi*, from which I do not think *lobengulæ* is specifically separable.

Port Nolloth). Not observed around Goodhouse in the valley of the Orange River. *Myotomys* colonies construct dome-shaped nests of small sticks and twigs, above ground, from two to three feet in height in the centre of bushes—both in sandy and rocky country. Under these nests are underground tunnels; within a few yards radius there are a dozen or so escape exits, most of which are under bushes or partly hidden by slight superstructures of small sticks. The burrows of *Myotomys* (as opposed to those of *Parotomys*) are not very deep, nor do they extend any great distance. They are shallower as a rule than those of *Liotomys*, although the overhead nest-mounds of the two may resemble one another closely. Bushes containing nests of *Myotomys* and *Liotomys* have a tendency to die after a time owing to root disturbance; when this happens the animals move to a fresh site. Diurnal. (Cf. Plate VI.)

64. *Otomys irroratus irroratus* (Brants).

Specimens from Eselfontein.

A swamp-dweller, consequently local in this region, even on the Kamiesberg; not likely to occur elsewhere in Little Namaqualand. Trapped among reeds in small patches of marshy ground at the headwaters of mountain streams at Eselfontein and near the upper slopes of Eselkop. The runways through swamp vegetation are easy to find. *Otomys irroratus* makes no regular burrows and lives normally above ground. Both diurnal and nocturnal: one individual was captured by hand whilst sunning itself during the heat of the day. It feeds largely upon the young shoots and lower stems of reeds and rushes.

Genus new to Little Namaqualand.

65. *Parotomys brantsii brantsii* (A. Smith).

Hottentot: ≠ ÄB : DURÜB (Eenriet).

Specimens from Platbakkies, Eenriet, Port Nolloth.

The type locality of *P. brantsii* is "towards the mouth of the Orange River," so that the series from Port Nolloth and Eenriet are practically topotypical.

Brants' *Otomys* abounds throughout the sandy plains of Little Namaqualand, to within a mile or so of the coast. Warrens were met with about ten miles south of Goodhouse, but not actually in the valley of the Orange River, where *Liotomys* was the only member of the group collected. It extends to the foot of the Kamiesberg,

but not on to the mountain plateaux. Farther north, around Springbok, etc., it occurs everywhere on the high karooveld. Many parts of Little Namaqualand are riddled by the excavations of *Parotomys*, the sand-plains being often honeycombed, to some extent in patches, for miles in every direction. The innumerable warrens compare with those of *Taterona* in other regions, the burrows being very similar, except that much frequented *Parotomys* entrances approach those of mierkats in diameter. The communities are much larger than the more circumscribed colonies of *Myotomys* and *Liotomys*.

It was found impracticable to dig out *Parotomys* in large numbers; individual warrens are often several hundred yards in circumference; many of the tunnels descend three or four feet below the surface, and connecting passages intercommunicate everywhere. There are also numbers of bolt-holes which doubtless serve as a means of escape from snakes and muishonds. The warrens are taken advantage of to some extent by other small animals—*Macroscelides*, *Elephantulus*, *Rhodomys*, *Desmodillus*, *Gerbillus*, etc., and a variety of lizards. These essentially communal rodents have (more perhaps than other *Otomyinae*) the marmot-like habit of sitting up on their haunches motionless at the entrances of their burrows, disappearing like a flash at the slightest sound, movement, or shadow. This extreme alertness may be partly attributable to the Harrier Hawks so frequently seen hovering above the warrens, obviously on the look out for unwary individuals.

Parotomys is not as a rule attracted by dry bait (mealies, oatmeal, etc.), and the easiest way to obtain specimens is to wait quietly near a warren and shoot them as they appear. They are exclusively diurnal, coming out to feed in the morning before the heat of the day (from 7–10 a.m.) and in the afternoon (from about 4 p.m. until just before sundown). On cool or cloudy days a few may be seen at any hour, but in windy weather they seldom venture above ground. Owing to their pale yellowish colour, which closely matches the sand, they are not at all conspicuous. Although apparently less migratory than *Taterona*, *Parotomys* communities move about from one aggregation of warrens to another: in consequence some warrens may be temporarily deserted, others partly or fully occupied. They feed here principally upon the leaves and flower-heads of fleshly leaved annual mesembryanthemums, and when a near-by supply fails move on to another group of burrows. As their food supply is practically inexhaustible they seldom have to wander far afield in search of it. On coming out to feed they creep cautiously to the nearest plant,

bite off a shoot or a flower-head and dart back with it. Sometimes an entire plant is bitten off just above the root and dragged to the entrance of a burrow. The droppings, bright green in colour when fresh, are scuffled out of the tunnels and may be seen in small heaps outside the entrances of certain burrows which are chosen primarily for these ejections. The warrens are invariably situated in open sandy karooveld where the scattered vegetation is not more than a foot or two in height. *Parotomys*, *Liotomys*, and *Myotomys* are gentle in captivity, and even when recently caught a hand can be moved freely among them; in a short time they will allow themselves to be picked up, only attempting to bite if handled roughly. The young of all members of the group are born in an advanced state, well clothed with short hair; when newly born they cling tightly to the mammae of the female until able to run quite actively. The female moves about, even above ground, with the young so attached. *Parotomys* seems to breed throughout the year, but perhaps more regularly during the warmer months. The number of young averages 2-3; more rarely 4. *Parotomys* differs from other subgenera of the *Otomysinae* in having large *jerboa-like* eyes and relatively short ears.

66. *Parotomys brantsii pallida* (Wagner).

Specimens from Kameelboom (S.W. Little Namaqualand).

I have referred this series to *P. brantsii pallida*, for which I propose to fix Kameelboom (about half-way between Garies and Hondeklip Bay) as the type locality.

This very uniform series differs markedly from the relatively variable typical subspecies from northern and eastern Little Namaqualand in being much less brightly coloured. General colour drabby grizzled grey with a slight wash of cinnamon above; in typical *brantsii* the general colour is sandy-buff washed with varying shades of orange-rufous.

67. *Liotomys littledalei littledalei* Thomas.

Hottentot: !HAEB (Goodhouse).

Specimens from Eenriet, Port Nolloth, Goodhouse, and from Louisvale.

The relatively long-eared *Liotomys* should not be associated too closely with *Parotomys*. In some respects it constitutes a link between *Parotomys* and *Myotomys*, and in habits more nearly resembles the latter.

Widely distributed in the north of Little Namaqualand and very plentiful where it occurs. The discovery of *Liotomys* in this region has extended considerably its known range; south of the Orange River it had been recorded previously only from Kenhardt (Tuin—type locality) and from Louisvale. Around Eenriet and Port Nolloth *Liotomys* inhabits karooveld where bushes, averaging 2–3 feet in height, grow close together—as at the bases of hills or along the edges of dry water-courses.

At Goodhouse, however (as around Berseba in Great Namaqualand), a few were found in burrows in the open sandveld unprotected by overhead shelters. At Eenriet and inland from Port Nolloth the more typical warrens with their nest-like superstructures were not easily distinguishable from those of *Myotomys*; they are similarly constructed of small sticks and situated in the middle of comparatively large bushes. Trails of loosely woven twigs line the surface runways close to the nests and partly surround the exits, many of which extend to adjacent bushes. The burrows under the nests penetrate deeper into the ground than those of *Myotomys*.

At Eenriet, *Liotomys*, *Myotomys*, and *Parotomys* were found in close association; although *Parotomys* always favoured the more open ground away from thick bushes. *Liotomys* comes out at the same hours of the day as *Parotomys* and *Myotomys*. *Liotomys* and *Myotomys* feed largely upon the leaves of shrubby “salt-bushes” (perennial mesembryanthemums).

I once kept females of *Liotomys* and *Myotomys* together: when caught they had young attached to their mammae: I interchanged the young ones, and, in spite of close contact, no subsequent interchange took place. They were eventually released, each with its adopted offspring.

Genus new to Little Namaqualand.

68. *Poemys melanotis insignis* Shortridge.

Specimens from Eselfontein.

Trapped in high grass close to swampy country.

Genus new to Little Namaqualand, where it may be restricted to the Kamiesberg.

69. *Saccostomus anderssoni hildae* Schwann.

Specimens from Goodhouse, and from Louisvale.

Also doubtfully recorded from a farm between the Kamiesberg and Platbakkies.

Goodhouse specimens match the Louisvale series which was referred to *S. a. hildae* by Thomas and Hinton.

At Goodhouse, trapped along the edges of water-furrows close to irrigated land: apparently not very plentiful in this region. The cheek-pouches contained castor-oil seeds.

Saccostomus is not gregarious: like *Steatomys* and *Desmodillus*, it is quarrelsome in captivity and will attack and often partly devour other small rodents. It is slow in its movements, and when above ground may easily be caught by hand. In life, *Saccostomus* bears some resemblance to gregarious *Steatomys*, but I doubt if this indicates near relationship.

Genus new to Little Namaqualand.

70. *Petromyscus barbouri* Shortridge.

Specimens from Witwater, Platbakkies, Eselfontein, Eenriet.

Widely distributed in Little Namaqualand wherever there are rocks and hills. The occurrence of this species at Platbakkies, 20 miles east of the Kamiesberg, indicates that it may extend some distance into Bushmanland.

P. barbouri is fairly plentiful in the Kamiesberg and was trapped in about the same numbers as *Graphiurus ocularis*.

Nocturnal, hiding by day in horizontal rock crevices.

One specimen from Witwater was a partial albino.

Scrotum small and concealed by fur, somewhat as in the *Muscardinidae*.*

Genus new to the Cape Province.

71. *Petromyscus collinus capensis* Shortridge.

Two specimens from Goodhouse.

Replacing *P. barbouri* in the Orange River Valley.

Habitat: rocky hills along the valley of the lower Orange River.

A second representative of a genus new to the Cape Province.

* I am not sure that St. Leger is correct in associating *Petromyscus* and *Saccostomus* with the *Dendromyinae*. *Petromyscus*, in life, has the appearance of a diminutive *Myomys*, and the dark smoky coloration of very young individuals resembles that of juvenile examples of *Myomys* and *Mastomys*. The group would seem to have no close associates. It may be noted that *Petromyscus* and *Petromus* coincide in range, from south-western Angola in the north, through South West Africa, to Little Namaqualand in the south. Consequently, where one genus is found to occur the other should be looked for.

FAMILY MURIDAE.

72. *Aethomys namaquensis namaquensis* (A. Smith).

Specimens from Witwater, Platbakkies, Eselfontein, Goodhouse, Eenriet, Kameelboom, and from Swartkop, Louisvale, Aughrabies Falls.

Aethomys namaquensis was described from "Little Namaqualand," and as Sir Andrew Smith obtained specimens from the Kamiesberg I propose fixing Witwater as the type locality. Extremely plentiful; occurring in rocky situations throughout Little Namaqualand. Ascending the highest peaks of the Kamiesberg and extending to the coastal hills 15 miles inland from Port Nolloth.

73. *Leggada minutoides minutoides* (A. Smith).

Specimens from Eselfontein, Goodhouse.

Apparently very local.

Genus new to Little Namaqualand.

74. *Mastomys coucha coucha* (A. Smith).

Specimens from Louisvale. Attracted there by cultivation.

Louisvale examples appear to constitute the most western record of the occurrence of *Mastomys* in the Orange River region.

Notwithstanding W. L. Selater's note that the South African Museum possessed specimens of *Mastomys coucha* from "Namaqualand" (Mamm. S. Africa, vol. ii, p. 49, 1901), its occurrence in any part of the north-western Cape Province (or even in Great Namaqualand proper),* requires confirmation. There have been no subsequent records, and I do not believe that it occurs in those regions.

75. *Mus musculus musculus* Linnaeus.

Hottentot: CHUHU : DURÜB (Kamiesberg).

Specimens from Witwater, Eselfontein, and from Louisvale.

Of the Kamiesberg (Witwater, Eselfontein) series about a third of the specimens are buffy-white below and may be of North African or Asiatic origin; in others there are varying degrees of intergradation with typical dark-bellied *musculus*.

The House Mouse is plentiful at Garies and in farms and Hottentot huts in the Kamiesberg. It doubtless occurs in all of the larger

* To the east of Great Namaqualand, in Gobabis District, Gordonias, and in Griqualand West, etc., *Mastomys coucha* becomes plentiful and widely distributed. Along the middle Orange River it doubtless occurs as far west as the cultivated region around Kakamas.

settlements in Little Namaqualand, but has not yet established itself at Goodhouse.

(76. *Rattus rattus alexandrinus* (E. Geoffroy and Audouin).)

A few imported House Rats are said to occur in stores and goods-sheds at Port Nolloth. They have not yet established themselves inland in this region.

77. *Rhabdomys pumilio cinereus* (Thomas and Schwann).

Hottentot: /HOGE/GAHEB (Goodhouse); DURÜB (Eenriet).

Specimens from Witwater, Eselfontein, Goodhouse, Eenriet, Port Nolloth, Kameelboom.

Type locality Klipfontein, six miles from Eenriet.

Striped Mice from different parts of Little Namaqualand vary somewhat in size and colour, Goodhouse and Port Nolloth specimens averaging larger and paler than the others: there is also a certain amount of seasonal colour change. Widely distributed: often very numerous along the beds of dry water-courses where scrub and low bushes form thickets.

Attracted by cultivation at Goodhouse. At Port Nolloth found in company with *Myotomys* in low salt-bush within a few yards of high-tide mark.

Extremely plentiful on the Kamiesberg at all altitudes.

In cool weather these diurnal mice come out at all hours of the day; but when it is hot they seldom appear until late in the afternoon. On one or two occasions I have observed them on moonlight nights. They are active animals and, in the open, cover the ground by a series of gerbil-like jumps. In the Kamiesberg they were sometimes found hiding in the nests of *Myotomys*.

78. *Rhabdomys pumilio griquae* * (Wroughton).

Specimens from Louisvale.

Plentiful in cultivated lands. Apparently local in this region.

79. *Thallomys shortridgei* Thomas and Hinton.

Hottentot: XAIS : DURÜB (Goodhouse).

Specimens from Goodhouse, and from Swartkop and Louisvale.

Goodhouse specimens match the typical set from Louisvale.

* Although subsequently amended to *R. p. griquae*, Louisvale specimens of *Rhabdomys* were at first referred provisionally by Thomas and Hinton to *R. p. bechuanae*.

T. shortridgei differs from other known members of the genus in the apparently consistent absence of pectoral mammae.* The obsolete ocular rings, much paler ears, less blackened tail and slightly larger "bicolored" feet (dusky patches on metapodials) also distinguish *T. shortridgei* from *T. nigricauda*, and I am now of opinion that they are specifically distinct.

Apparently not very plentiful around Goodhouse, but found along the banks of the Orange River wherever sufficiently large acacias occur. There are no trees with hollow trunks for them to hide in, as around Louisvale, but untidy shelters of sticks and twigs, like large crows' nests, are built amongst the thin topmost branches. One of these was inhabited by about a dozen individuals, adult and immature. At Goodhouse these normally nocturnal Tree Rats occasionally come out by day: several were shot whilst running along branches close to the nests between 3 and 4 in the afternoon. As a rule members of the genus do not leave their hiding places before dusk.

Genus new to Little Namaqualand.

FAMILY BATHYERGIDAE.

80. *Bathyergus janetta janetta* Thomas and Schwann.

Hottentot: /GEI/HĀBA TSŪRU (Eenriet, Port Nolloth).

Specimens from Port Nolloth.

Plentiful in the coastal sandveld, but only in areas where there is soft white sand. Extending in isolated patches inland from Port Nolloth to as far as Anenous; and from Hondeklip Bay to 20-30 miles or more from the sea.

Bathyergus janetta extends along the coast at least as far north as the mouth of the Orange River †: Alexander, in 1835, recorded that "*The numerous mole-hills near the mouth of the Orange River render riding dangerous.*" The southern limit of its range is apparently about latitude 31°.

B. janetta is very plentiful around Port Nolloth, but farther inland its distribution becomes disconnected and patchy.

* A parallel instance of mammary variation occurs in species of *Petromyscus*: in *P. barbouri* the pectoral mammae appear to be consistently absent; in *P. shortridgei* they are usually, but not invariably, absent.

† Berseba Hottentot reports indicate that *Bathyergus janetta* may extend across the Orange River into the south-western littoral of Great Namaqualand, between the mouth of that river and Luderitz.

At Port Nolloth (January and February—windy season) these mole-rats appeared to be partially dormant: owing to sand-storms the mounds had disappeared and no recent activity was observed. Their presence, however, was soon detected by the collapse of the surface tunnels in the soft sand when trodden upon. When these tunnels were opened up the occupants, half an hour or so afterwards, pushed their heads out for a few moments prior to re-closing them.

81. *Bathyergus janetta inselbergensis* Shortridge.

Hottentot: ÜRI : DURÜB (Kamiesberg).

Specimens from Eselfontein.

A mountain or southern race of *B. janetta*.

An isolated aggregation of mounds was first discovered at Eselfontein (near Leliefontein, altitude 4000–5000 feet); others were subsequently observed between Leliefontein and Kamieskroon, and between Kamieskroon and Garies; the last locality, although near the base of the Kamiesberg, is well within the restricted cloud and rainfall area. Some of the excavations were in soft sand; others in light sandy loam.

At Eselfontein mounds extended through narrow strips of sand between patches of outcrop; some were in cultivated corn land.

In the Kamiesberg mounds of *Cryptomys* and *Bathyergus* occur in close association; the latter being easily distinguishable by their large size and by the circumference of the rolls of compressed sand thrown up. The diameter of the tunnels averages $2\frac{1}{2}$ – $3\frac{1}{2}$ inches. Many of the tunnels are so near the surface that they collapse when trodden upon; others penetrate far into the ground.

Stomach contents: half-digested bulbs, some fibrous matter, and the hard parts of a few large underground crickets.

No foetuses were obtained; one female (4th December) had enlarged mammae. Mammae 6 (2 pect., 2 abd., 2 ing.).

(82. *Georychus capensis capensis* (Pallas).)

Occurrence doubtful, although possibly extending as far north as the southern border of Little Namaqualand.

W. L. Sclater (Mamm. S. Africa, vol. ii, p. 76, 1901) records *Georychus capensis* from "Namaqualand"; but I suggest that the mounds of *Bathyergus janetta* (an unknown species at the time), so numerous and conspicuous in that region, had been mistaken for those of

Georychus. The size and markings of the two animals are also somewhat similar.*

83. *Cryptomys hottentotus hottentotus* (Lesson).

Hottentot: !HĀBA TSŪRU (Eenriet); XOU : DURÜB
(Kamiesberg).

Specimens from Witwater, Eselfontein, Eenriet.

The Witwater-Eselfontein series (irrespective of sex) are somewhat variable in size and colour. *Cryptomys hottentotus* has a wide distribution in Little Namaqualand, but does not occur in the most arid type of karooveld which extends everywhere east of the Kamiesberg towards Bushmanland and in a wide belt along the south bank of the Orange River.†

Innumerable mounds were observed, sometimes covering acres of land, between Garies in the south and about half-way between Concordia and Goodhouse in the north—the northern limit being where hills and rocky outcrop merge into the desert sand-plains which lie between the interior highlands and the Orange River Valley.

Cryptomys does not occur close to the coast in Little Namaqualand, but, inland from Port Nolloth, mounds were observed about 3 miles west of Anenous; and about 18 miles inland from Hondeklip Bay.

On the Kamiesberg *Cryptomys* mounds are ubiquitous, the Leliefontein and other plateaux being riddled by their tunnels. There were mounds in a narrow strip of black soil between rocks along the steep sides of a small mountain stream within a few hundred feet of the summit of Eselkop (5456 feet).

When caught alive these mole-rats snap savagely and give vent to angry squeaks. Many females (November–January) contained foetuses, five being a frequent number. Mammæ 6 (2 pect., 2 abd., 2 ing.). In one specimen there were 7 mammæ (3 ing.).

FAMILY CTENODACTYLIDAE.

84. *Petromus typicus typicus* A. Smith.

Hottentot: !K'NŌKI, or !ŪE : DURÜB (Eenriet); //HARUGES
(Goodhouse); !K'NŌKI : DURÜB (Kamiesberg).

Afrikaans: DASSIEROT (Aughrabies Falls).

Specimens from Witwater, Platbakkies, Goodhouse, Eenriet, Kameelboom, and from the Aughrabies Falls.

* Selater's Kimberley record for *Georychus capensis* was almost certainly based upon incorrect information.

† Nor does it appear to cross the Orange River into Great Namaqualand.

The type came from "Mountains towards the mouth of the Orange River."

The series from Goodhouse, rather more bleached-looking on the whole than Kamiesberg specimens, may be regarded as topotypical.

Specimens from the Aughrabies Falls (about 200 miles farther inland) are to some extent intermediate between the typical subspecies and *P. typicus tropicalis*.

P. typicus is plentiful in rocky localities throughout Little Namaqualand: the extreme southern limit of its range is approximately latitude 31°, south of which the coastal hills disappear and level salt-plains extend as far as the Olifants River mouth. In the Kamiesberg *Petromus* occurs as high up as Witwater (3500-4000 feet), but does not ascend to the cloudy Eselfontein plateau nor to the summits of the higher peaks. Its inland range, beyond Platbakkies, was not ascertained; in the Orange River Valley it does not occur east of Kakamas, but in South West Africa it extends as far inland as the Karas Mountains.

Whilst springing from one rock to another this diurnal rodent spreads its flattened body somewhat after the manner of a flying-squirrel; but when running along ledges or inside crevices it might easily be mistaken at a distance for a newly born Rock Dassie. The flat head and body enable it to squeeze inside the narrow horizontal rock fissures which are an essential characteristic of the hills it frequents. The "Dassie Rat" is attracted to some extent by dry bait (mealies, etc.), but its usual diet, judging by the colour of fresh droppings, is green food. The animal has a pleasant aromatic smell. After several have been trapped in one area the remainder seem to become wary and suspicious.

The tails are curiously brittle, and, with careless handling, often snap off in a lizard-like manner. Approximately 10 per cent. of the specimens collected, both in Little Namaqualand and elsewhere, were without tails, the fracture having most frequently occurred at the base.*

* Although, as with many lizards, this brittleness may be a protective aid in escape from enemies, it is suggested, as a matter of speculation, that it may be of peculiar evolutionary significance; the tail, for some reason having become redundant, being in actual process of disappearing—somewhat after the manner in which flying-ants shed their wings. (It may be noted with regard to its not very distant ally the Cane Rat that the tail also breaks off very easily.) The *Chrysochloris*-like iridescence at the base of the tail in *P. typicus tropicalis* (which disappears shortly after death) is peculiar to that subspecies. There is no trace of it in *P. typicus typicus* nor in *P. cunealis*.

Petromus does not breed throughout the year, but appears to have a well-defined breeding season. A female (5th November) contained a late foetus; a young specimen, hardly a fortnight old, was trapped on the same day. The female gives birth to a single young one, less frequently two; the young are born in an advanced state, clothed with short hair, and relatively very large.

Mammae 6 (normally)—lateral: the pectoral pair is sometimes absent. A short "baculum."

FAMILY PEDETIDAE.

85. *Pedetes cafer cafer* (Pallas).

Hottentot: \neq HÖB (Eenriet); \neq GÖB (Goodhouse).

Specimens from Louisvale.

Spring Hares occur somewhat sparsely in the sandy desert between Concordia and Goodhouse; a few burrows were observed within a mile or two of Goodhouse itself. According to local Hottentots they become more numerous farther east towards the northern Bushmanland Border. They do not occur in the coastal regions, on the Kamiesberg, nor, I believe, anywhere in southern Little Namaqualand.

FAMILY HYSTRICIDAE.

86. *Hystrix africae australis africae australis* Peters.

Hottentot: !HÖAB (Eenriet); !NÖAB (Goodhouse).

'Tkaboek Bushmen: N/NÖAB (H. J. Wikar).

Specimens from Witwater, Eselfontein, Eenriet, and from near Upington.

Widely distributed and comparatively plentiful.

Males average slightly larger than females.

A "baculum" (♂), and a "baubellum" (♀).

FAMILY PROCAVIIDAE.

87. *Procavia capensis capensis* (Pallas).

Hottentot: !ÖUS (Eenriet); !ÄU (Goodhouse); !ÄUB (Kamiesberg).

Specimens from Witwater, Eselfontein, Eenriet, Kameelboom, and from Upington, Swartkop, Aughrabies Falls.

Everywhere plentiful in rocky localities.

FAMILY ELEPHANTIDAE.

(88. *Loxodonta africana africana* (Blumenbach).)

Hottentot: ≠ ŌAS (Eenriet); /OAS (Kamiesberg).

In 1760 Jacobus Coetse Jansz (Journals) shot two Elephants between the Coperbergen and Groene Rivers in Little Namaqualand. On 21st September 1779, Hendrick Jacob Wikar shot two out of a herd, some with calves, near Caboopfontein, about 10 miles east of Pella on the south bank of the lower Orange River, and observed places where Elephant and Rhinoceros had been digging for water. On a later expedition he met with still larger herds in the same region (Wikar's Journals).

FAMILY HIPPOPOTAMIDAE.

89. *Hippopotamus amphibius capensis* Desmoulins.

Hottentot: !HAUS (Eenriet); !KHAOS (Goodhouse); !KHAO (Kamiesberg).

A Hippo tusk was picked up in the bed of the Orange River near Upington in 1921 and is now in the Kaffrarian Museum.

Extinct in the Orange River since 1925 (cf. Shortridge, Mamm. S.W. Africa, vol. ii, pp. 646-647, 1934).*

"A cow Hippo and a young one were shot in about 1925 at Dabaras, close to the junction of the Orange and Fish Rivers, which were in flood at the time. In 1920-21 a big bull Hippo was shot by Louw at Grootderm, between 17 and 18 miles from the mouth of the Orange River. In 1913 there are said to have been two Hippo farther up the river between Pella and the Aughrabies Falls."—C. Weidner (1937).

"Hippo in the upper parts of the Gariep remain during the day in deep parts of the river, commonly known as 'Sea-cow Holes,' and issue out to feed at night."—J. E. Alexander (1838).†

(According to Wikar: "A wounded Hippo will leave the water as it cannot endure the nibbling of the fish!")

FAMILY SUIDAE.

(90. *Phacochoerus aethiopicus aethiopicus* (Pallas).)

Hottentot: DIRIB (Goodhouse); /KŨ : PU-IS (Eenriet);
/PHARKIT (Port Nolloth).

Wart-hog have been extinct in Little Namaqualand for many years; there are few traditions of their former existence.

* See Editor's note on p. 99.

† Alexander afterwards observed similar "Holes" in the Fish River (Great Namaqualand).

"Wild-pig" are said at one time to have existed on bush-covered islands in the Orange River between Upington and the Aughrabies Falls; but it is uncertain whether these were Wart-hog or Bush-pig.

FAMILY GIRAFFIDAE.

(91. *Giraffa camelopardalis capensis* (Lesson).)

Hottentot: !HAIB (Eenriet); !NEIB (Goodhouse).

H. J. Wikar (Journals, 1779) saw the fresh spoor of Giraffe near Caboopfontein, about 10 miles east of Pella (south bank of the lower Orange River), and, later, observed about twenty in the same region.*

FAMILY BOVIDAE.

(92. *Alcelaphus caama caama* (G. Cuvier).)

Hottentot: //KHAMA (Eenriet); //KAMAB (Goodhouse).

Extinct in Little Namaqualand.

According to W. L. Sclater (Mamm. S. Africa, vol. i, p. 133), there were still a few Hartebeest surviving in the deserts of Little Namaqualand and Kenhardt in 1900.†

"There were no Hartebeest left in Little Namaqualand in 1903."—C. Weidner.

There is a "Hartebeest River" in Little Namaqualand, a tributary of the Groene River; and another of the same name in Kenhardt District.

(93. *Connochaetes gnou* (Zimmermann).)

Hottentot (Old Cape): 'GNOU.

There appear to be no definite traditions of the former occurrence of Black Wildebeest in Little Namaqualand, but they doubtless extended at least as far west as Bushmanland.‡

* There are not many authentic records of the former occurrence of Giraffe south of the Orange River, but traditions and Bushman paintings indicate their past existence in several parts of the northern Cape Province (cf. Shortridge, Mamm. S.W. Africa, vol. ii, pp. 622-623, 1934).

† The Cape Hartebeest was apparently exterminated south of the Orange River very early in the present century. There is a weathered skull in the Kaffrarian Museum which was discovered on the Cape Flats by Dr. J. I. Brownlee over thirty years ago.

‡ North of the Orange River Black Wildebeest used to extend at least as far west as Gordonia. Although Black and Blue Wildebeest are commonly known to overseas zoologists as "White-tailed Gnus" and "Brindled Gnus" respectively, the name GNU (or 'GNOU) of Cape Hottentot origin, adopted by some of the early hunters, Cornwallis Harris, etc., is seldom used colloquially in South Africa.

94. *Sylvicapra grimmia grimmia* (Zimmermann).

Hottentot: /HŌUS (Eenriet); /HǃOS (Goodhouse).

One specimen from Platbakkies (a horned female).

Occurring in most parts of Little Namaqualand, but restricted to suitable localities, such as hill-slopes and level country near hills, where there is a sufficient density of bush and scrub.

Duiker are not uncommon on the Kamiesberg in the more sheltered valleys and ravines.

95. *Oreotragus oreotragus oreotragus* (Zimmermann).

Hottentot: //KHĒISIS (Eenriet); //KHǃISIS (Goodhouse,
Kamiesberg).

Specimens from Witwater, Eselfontein, Goodhouse, and from the Aughrabies Falls.

Klipspringer are generally distributed in rocky mountainous country: fairly plentiful on the Kamiesberg.

96. *Raphicerus campestris campestris* (Thunberg).

Hottentot: /ARIS (Eenriet); !ARIS (Goodhouse, Kamiesberg).

Specimens from Eenriet.

Not everywhere plentiful, but widely distributed over the open plains and coastal sand-dunes. Steenbok do not occur on the plateaux of the Kamiesberg.

(97. *Pelea capreolus* (Bechstein).)

Hottentot: !KHORIP, SǃMP, !AMI (Eenriet); SǃS (Goodhouse).

The Vaal Rhebok is extremely rare in Little Namaqualand and very little is known about it. A few are believed to exist in the Richtersveld and on other mountain ranges near the mouth of the Orange River, west of its junction with the Fish River. I received rather indefinite reports of one or two small troops on hill ranges south-west of the Kamiesberg. Extinct to-day on the Kamiesberg itself, except for a party of three on one of J. Studer's farms (1936).

98. *Antidorcas marsupialis hofmeyri* Thomas.

Hottentot: //HŨ (Eenriet); //GŪS (Goodhouse); //GŪB
(Kamiesberg).

One specimen (skull and horns) from Upington District (subsp. inc.). Towards the end of the last century Scully shot a Springbok in

the Richtersveld which astonished him on account of its size, and was informed that all in that region were about as large. He recalled having read that Francis Galton had shot a specimen near Walvis Bay weighing 160 lb. Scully was also informed that the Richtersveld Springbok did not trek, and suggested that they might be referable to a distinct west coast race.

Antidorcas m. hofmeyri from South West Africa is believed to average heavier than the typical subspecies; its range, therefore, presumably extends coastally across the lower Orange River into Little Namaqualand.*

Springbok are almost extinct in Little Namaqualand: there are some still in the Richtersveld, possibly reinforced now and again by occasional migrants from South West Africa, and a few scattered troops in the north-west towards the Bushmanland Border.

"Springbok were plentiful near Goodhouse up to about 1925: scattered herds of from 10-20 still occur. They used to cross the Orange River from the north at Sendlings Drift in herds of 100 at a time during the winter months when the water was low. They still cross over periodically in small numbers."—C. Weidner (1937).

(99. *Oryx gazella gazella* (Linnaeus).)

Hottentot: /HAIB (Eenriet); /GÄEB (Kamiesberg);
/GÄES (Goodhouse).

A few Gemsbok still survive in the Richtersveld, near the mouth of the Orange River, where they are protected so far as possible. In January 1937 (Port Nolloth) a poacher was fined for shooting one.

(In 1835-6, Alexander recorded Gemsbok from Komekas, near the Orange River mouth.)

They are extinct elsewhere in Little Namaqualand, except for occasional individuals or small parties that cross the Orange River at low water from South West Africa between its junction with the Fish River and Pella.

"There are very few Gemsbok south of the Orange River to-day; on the north bank they were plentiful up to about 1930, where, from Sperlingsputs westwards, herds of from 30 and 40 to 60 were seen together. They

* If this is correct, the typical race (*A. m. marsupialis*) from "Southern Cape Colony" may be extinct in a feral state everywhere south of the Orange River and only represented there to-day inside fenced farms. I doubt the validity of *A. m. centralis*, typically from Deelfontein; the Kaffrarian Museum possesses a mounted head from Middleburg, only 20 miles from Deelfontein, which does not differ from Cradock and Bedford specimens.

have been scarce since the great drought of 1932 and have been much shot out.”—C. Weidner (1937).

(100. *Strepsiceros strepsiceros strepsiceros* (Pallas).)

Hottentot: XEIB (Eenriet, Kamiesberg); XYB (Goodhouse).

Kudu are practically extinct in Little Namaqualand: there may be a few in the Richtersveld; and occasional stragglers from South West Africa have been recorded within recent years from mountains close to the Orange River between the Fish River mouth and Pella.

In 1921 I saw Kudu tracks on the north bank of the Orange River near the Aughrabies Falls.

In 1779, H. J. Wikar (Journals) observed “a large herd of Kudu” in Little Namaqualand.

“The last Kudu shot in the Kamiesberg was between thirty and forty years ago.”—J. Studer (1936).

“The last four Kudu observed near Goodhouse were at Haakiesdoorn Farm (Sperlingsputs) in about 1921: one of them was watched coming down to drink. In about 1933 a single individual was seen close to Pella Drift.”—C. Weidner (1937).

(101. *Taurotragus oryx oryx* (Pallas).)

Hottentot: /HANS (Eenriet); /KHAN (Goodhouse).

In 1835–36, Alexander found Eland in Little Namaqualand near the mouth of the Orange River (presumably in the Richtersveld).

(102. *Syncerus caffer caffer* (Sparrman).)

Hottentot: /GAUB (Goodhouse).

In 1779, H. J. Wikar (Journals) saw skulls of Buffalo, which had been killed by natives, before crossing the Orange River, and, later, observed big herds along the banks of that river.

There is a “Buffels River” in Little Namaqualand.

FAMILY RHINOCEROTIDAE.

(103. *Ceratotherium simum simum* (Burchell).)

Hottentot: /HĀBA (Eenriet).

Although the Black Rhinoceros (*D. bicornis*) was always, presumably, more plentiful than *Ceratotherium simum* south of the Orange River, /HĀBA, the Hottentot name, still locally surviving,

refers correctly to the White species, an indication of its former occurrence in Little Namaqualand.*

(104. *Diceros bicornis bicornis* (Linnaeus).)

Nama Hottentot (Great Namaqualand): /KI : S.

H. J. Wikar (Journals, 1779) met with Rhinoceros at Caboopfontein, Kaykoop (many of these early name-places have been lost sight of), and elsewhere in Little Namaqualand.†

FAMILY EQUIDAE.

(105. *Equus (Quagga) quagga quagga* Gmelin.)

Hottentot: /HEI/NOREB (Eenriet); ≠ NŪ!GOREB (Goodhouse).

Hottentot names for two kinds of Zebra still survive in Little Namaqualand; it is presumed that the Zebra of the plains was the "Cape" Quagga. In 1779, Wikar (Journals) noted the occurrence of "Wild Horses," as opposed to "Zebras" in Little Namaqualand.‡

(106. *Equus (Hippotigris) hartmannae hartmannae* Matschie.)

Hottentot: /ŪE/NOREB (Eenriet); !GOREB (Goodhouse, Kamiesberg).

It seems almost certain that the Mountain Zebra which formerly existed in Little Namaqualand was the South West African *Equus hartmannae*. Within the last ten years or so there have been one or two accounts of stray Zebra seen between Klipfontein and the Richtersveld; these may have been temporary migrants from the north bank of the Orange River which, in the dry season, is fordable in several places.§

* In the Port Elizabeth Museum there is a weathered pair of White Rhinoceros horns (*oswellii* type), discovered at Seeheim (Great Namaqualand) by G. Wicham in 1919.

† In 1895-96, Alexander recorded both species of Rhinoceros from the Fish River Valley in Great Namaqualand.

‡ In Alexander's Map (1835-36) "Plains with Zebra" is inscribed on the north bank of the Orange River about opposite to where Goodhouse now stands; but the Zebras recorded by Alexander from Great Namaqualand, "with striped neck and body and unstriped white legs," were perhaps referable to the Griqualand West subspecies, *E. quagga burchelli*, now, like the Cape Quagga, extinct.

§ *E. hartmannae*, which has a wide but disconnected and sparse distribution in the coastal mountains of South West Africa, is said still to occur in southern Great

There are traditions of the past existence of Mountain Zebra on the Kamiesberg, supported by name places, such as Eselkop, Eselfontein, "Wilde Paard Hoek" (Alexander), etc.

EXPEDITION NO. 2: THE NORTH-WEST CAPE PROVINCE
(NOVEMBER 1937–FEBRUARY 1938).

*On a Collection of over 1500 Mammals from the Olifants
River Basin and surrounding country.*

Five main collecting camps were made at the following places:—

1. *Nieuwoudtville*: 42 miles west of Calvinia; altitude 3500 feet approx. Situated on the western edge of the Bokkeveld Mountains near the summit of Van Rhynsdorp Pass. Heathy high-veld with numerous small springs; and fairly open, level, and undulating sandy bush-veld; a few patches of limestone outcrop. One or two farms and a small amount of cultivation.

2. *Travellers Rest*: 18 miles north-east of Clanwilliam; altitude 600 feet approx. A sheltered valley, partly under cultivation, between rocky hills and ridges of outcrop. A belt of swamp vegetation along the banks of the Boontjes Stream, an affluent of the Doorn River—itself a tributary of the Olifants River.

3. *Kliphuis (Pakhuis Pass)*: about 11 miles east of Clanwilliam, on a northern spur of the Cedarberg Mountains; altitude 2500–3000 feet. A narrow defile between precipitous cliffs; rather thick bush and much rocky outcrop; several mountain streams.

4. *Hex River Estate**: low-lying country close to the Olifants River, partly surrounded by steep rocky hills; flats under cultivation, orange orchards, etc.; altitude 300 feet approx. 10 miles north of Citrusdal.

5. *Compagnies Drift*: 10 miles inland from Lamberts Bay; altitude 100 feet approx. Undulating soft sandy country with an even peppering of comparatively low bush. Occasional narrow stretches

Namaqualand between the Fish River mouth and Kanus Railway Station (near Luderitz).

In 1895, C. Weidner met with many Mountain Zebra in the Tiras Mountains in Great Namaqualand, and, as recently as 1921, saw a few on some hills about 10 miles north of the Orange River opposite Goodhouse.

* This Hex River is a small tributary of the Olifants River, and must not be confused with the better-known river of the same name which rises in the Hex River Mountains.

or pools of surface water in the bed of the "Jakkals" River. A few scattered farms and patches of corn land.

Short visits were paid to *Clanwilliam*, *Lamberts Bay*, *Klaver*, *Citrusdal*, *Het Kruis*, *The Cold Bokkeveld* (S.E. of *Citrusdal*), etc.: specimens from these and other named localities were also collected and contributed by local residents.

59 out of 73 recorded species were collected: of the remaining 14, 3 are extinct, and 7 of the others widely distributed or locally scarce forms previously obtained in Little Namaqualand.

FAMILY MACROSCOLIDAE.

1. *Macroscelides proboscideus* subsp.

One specimen from Compagnies Drift, near Lamberts Bay.

M. proboscideus langi was described from Vlermuisklip, Van Rhynsdorp District, about 25 miles distant, but I am unable to form an opinion as to the subspecific status of this single specimen; it matches very closely Little Namaqualand material, which, following Thomas, who compared Grant's Namaqualand series with the type, I referred previously to *M. proboscideus melanotis*.*

2. *Elephantulus capensis* Roberts.†

Specimens from Travellers Rest, Kliphuis, Citrusdal, Hex River Estate, Het Kruis.

Tail gland slightly ridged; length $\frac{1}{2}$ –1 inch; width about 1 mm.

FAMILY CHRYSOCHLORIDAE.

3. *Chrysochloris asiatica* (Linnaeus).

Four specimens from Citrusdal.

These examples, with greenish reflections, match typical specimens of *C. asiatica* from Cape Town.

* The typical subspecies was described from "The Cape" (Beaufort West?).

† *Elephantulus edwardsii* was described by Sir Andrew Smith from "near the Olifants River, Cape Colony"; but since *capensis* is the only species of *Elephantulus* known to occur in the North-Western Cape Province (south of Little Namaqualand), the greater part of which comprises the basin and watershed of the Great Olifants River, I suspect the Olifants River referred to by Smith to be another of the same name which flows past Oudtshoorn, through a region in which he collected. This second Olifants River is a main tributary of the Gouritz River, which enters the sea near Mossel Bay. *Elephantulus vandami*, typically from Cradock, may prove

4. *Chrysochloris minor* Roberts.

Hottentot: 'TSANGGAS (Lamberts Bay).

Specimens from Compagnies Drift and Graaffwater (both inland from Lamberts Bay), Travellers Rest, Kliphuis.

Lamberts Bay is about 25 miles from Klaver, the type locality for *C. minor*. The majority of the above specimens are distinguishable externally from *C. asiatica* by the metallic reflections on the back being violet or indigo without a trace of greenish, and by their definitely smaller *average* size, although the dimensions of some examples in the present large series (up to 115 mm. in length) exceed considerably those of the type.

In the Lamberts Bay material there are two colour forms: (a) darker (typical), and (b) paler (without decided metallic lustre); they appear to intergrade, but, pending further examination, I am not altogether satisfied that they are all referable to the same species. Many bear some resemblance to Kamiesberg specimens (referred to *C. namaquensis*) in their smaller size and brownish general coloration; darker and larger specimens correspond more closely with *C. asiatica*. Although occurring in the same region (the Lamberts Bay hinterland), *Chrysochloris minor* and *Cryptochloris zyli* differ altogether in choice of habitat. *Chrysochloris*, which is plentiful, inhabits alluvial soil near the banks of streams, cultivated lands, etc.; whereas *Cryptochloris*, relatively scarce, is restricted in range to the white coastal sand-dunes and occurs side by side with *Eremitalpa granti*; the two making similar runways and appearing to be almost identical in habits.

5. *Chrysochloris concolor* Shortridge.

Two specimens from Nieuwoudtville (42 miles west of Calvinia),* and Travellers Rest.

A study of colour variations in a large series of *Chrysochloridae* from around Lamberts Bay, one of which is almost as pallid as *C. concolor*, indicates that both *C. minor* and *concolor* are closely allied to *C.* to be synonymous with *E. edwardsii* when accepted topotypes of the latter become available for comparison. There are specimens of *Elephantulus* in the Kaffrarian Museum from Bedford, between Cradock and the "Oudtshoorn" Olifants River.

(There is a third Olifants or Olifants Vlei River in the Cape Province, in Kenhardt District.)

* In the South African Museum there is a specimen of *Chrysochloris* from Calvinia, labelled *C. calviniae* (Lang)—"type"; but no description was ever published. The skin (without skull), made up from an old spirit specimen, is bleached beyond recognition and quite useless for diagnostic purposes.

asiatica. For geographical reasons, however, the (apparently) inland high-veld range (Nieuwoudtville-Calvinia) of *concolor* is in favour of its specific rank being provisionally retained.

Around Nieuwoudtville *Chrysochloris* runways were sometimes found to radiate from the base of bushes: they are also relatively numerous in cultivated and open grass lands. When the shallow tunnels occur in thick turf their course can be traced by disturbed grass roots, in addition to the usual surface cracks. Golden Moles burrow and move about below ground at all hours; most if not all of them, however, appear to be more active during the night, when they often travel overland.

6. *Eremitalpa granti* (Broom).

Three specimens from Compagnies Drift.

These appear to match exactly the large Port Nolloth series previously collected. *Eremitalpa* does not seem to be so plentiful around Lamberts Bay (where it occurs side by side with *Cryptochloris*) as at Port Nolloth. It is possible that both genera extend as far south along the coast as the Berg River mouth.

7. *Cryptochloris zyli* Shortridge.*

Specimens from Compagnies Drift.

Except for being a shade paler, *Cryptochloris zyli* much resembles average specimens of *Chrysochloris minor* in colour; but the fur is shorter (more plush-like) and the silvery-violet reflections are restricted to a profuse peppering of metallic hairs which are very slightly coarser than the smoky underfur: this gives the back an obscurely spangled appearance. In *Cryptochloris* the hindclaws are larger and longer than in *Chrysochloris minor*. The three long foreclaws are subequal, to the extent that they meet almost in a point; in the type the foreclaw measurements are as follows: 1st, 6.5; 2nd, 8; 3rd, 10; 4th, 2 mm. The 2nd claw protrudes slightly beyond the 1st and 3rd, the 1st being much longer and stouter than in *Chrysochloris*.

Cryptochloris would seem to form a link between *Chrysochloris* and *Eremitalpa*.

* In the original description of *Cryptochloris zyli* I suggested the possibility of *Chrysochloris wintoni* being allied to it, owing to some cranial similarity; but skins of *wintoni* indicate that it has the cylindrical shape of a *Chrysochloris*; whereas *Cryptochloris* and *Eremitalpa*, in life, differ from all other members of the family in being lozenge-shaped and flattened, like small tortoises.

When handled *C. zyli* gives vent to a fairly sharp squeak; it shams dead when first picked up or even when turned over with a spade. The surface runways are quite like those of *Eremitalpa*, except that, owing to the extremely powdery nature of the sand in which it burrows, the roofs of the tunnels fall in almost at once and form shallow furrows. After rain, when there is a slight crust on the sand, fresh workings are indicated by minute surface cracks which disappear as soon as the ground becomes dry. The deeper tunnels were usually found to lead to the base of bushes; this tendency for the "lying up" chambers to be situated under and protected by the tangled roots of desert vegetation was not noticed in the case of *Eremitalpa*. After unsuccessful attempts to dig them out, they almost invariably desert the disturbed ground and escape overland the following night, often to a distance of several hundred yards. Judging by the number of surface tracks visible in the early mornings these tiny sand moles travel considerably above ground by night.*

Range: the coastal sand-dune belt within about 10 miles of the sea south of the Olifants River mouth, and perhaps some distance northwards.

FAMILY SORICIDAE.

8. *Suncus warreni* Roberts.

Specimens from Compagnies Drift, Redlinghuis.

These Pigmy Shrews agree well with the description of *S. warreni*, typically from Doorn River, Van Rhyndorps District, a region not far from Compagnies Drift.

A very uniform series at once distinguishable from *S. varilla* by the far more pallid dorsal coloration, whitish underparts and feet, bicolored tail and longer fur.

9. *Suncus gracilis* (Blainville).

One specimen from Compagnies Drift (Coll. No. 3652).

A few shades darker above than *S. warreni* and without rusty tips to the hairs; underparts slate, hardly paler than above; hands and feet dusky and markedly larger than in *warreni*; tail dark slate above and below. Resembling *warreni* in its relatively long fur.

Pending further comparative material this Pigmy Shrew is referred provisionally to *S. gracilis*, typically from "The Cape of Good Hope."

* More so, perhaps, than do any of the other small *Chrysochloridae*, but the Giant Forest Golden Mole (*Chrysospalax trevelyani*), during the summer months, spends a very great deal of its time above ground amongst dead leaves and wandering about in thick undergrowth.

10. *Crocidura cyanea* (Duvernoy).

One specimen from Citrusdal (Coll. No. 221).

A medium-sized pale smoky-grey Shrew, quite certainly referable to and consequently topotypical of *C. cyanea*, which was originally described in 1838 from "La rivière des Eléphants, au sud de l'Afrique."

Citrusdal, which is situated centrally on the Olifants River, may now be fixed as a definite type locality for *Crocidura cyanea*.*

11. *Crocidura martensii* Dobson.†

Specimens from Citrusdal, Het Kruis, Redlinghuis, Hex River Estate, Vredendal, Travellers Rest, Kliphuis, Compagnies Drift, Elands Bay.

This very uniform series agrees in all respects with Little Namaqualand specimens.

Comparatively plentiful and widely distributed over the North-Western Cape Province. Habitat: sandy, grass or rocky country; attracted by irrigated gardens at Travellers Rest.

12. *Myosorex varius varius* (Smuts).

Specimens from Kliphuis, Redlinghuis, Het Kruis, Citrusdal, Hex River Estate, Compagnies Drift

A series matching closely specimens previously collected in Little Namaqualand; some of the Namaqualand specimens are perhaps a shade paler.

FAMILY NYCTERIDAE.

13. *Nycteris capensis capensis* A. Smith.

Specimens from Compagnies Drift.

FAMILY RHINOLOPHIDAE.

14. *Rhinolophus capensis* Lichtenstein.

Specimens from Compagnies Drift, Het Kruis. One specimen (Het Kruis) illustrates the bright orange phase.

* *Crocidura argentata* (Sundeval), apparently a similar, if not still paler silver-grey species, typically from Roodeval (near Cookhouse), about half-way between Cradock and Grahamstown, Eastern Cape Province, was described in 1860, over twenty years after *C. cyanea*.

† It may be that *Crocidura martensii* is a synonym of *C. capensisoides*.

FAMILY VESPERTILIONIDAE.

15. *Cistugo lesueuri* Roberts.

Two specimens from Hex River Estate. Also identified in flight at Clanwilliam.

Wing glands are present, but in an entirely different position to those in *C. seabrae*. In *C. lesueuri* the glands are less thickened, narrower, and situated in the wing membrane a short distance from the centre of the radius. In dry skins these glands become absorbed and lost to sight. Larger and darker in colour than *Cistugo seabrae*, but similar in flight. Appearing on the wing as early in the evening as *Eptesicus*, and favouring the close neighbourhood of orange groves and other shade trees.

16. *Eptesicus capensis capensis* (A. Smith).

Specimens from Travellers Rest, Compagnies Drift.

Compagnies Drift specimens were much infested with parasites (*Cimex* sp.).

17. *Scotophilus angusticeps* Shortridge.

Two specimens from Hex River Estate; also identified on the wing at Citrusdal.

Similar in flight to other members of the genus; appearing to favour the neighbourhood of shade trees.

FAMILY MOLOSSIDAE.

18. *Nyctinomus bocagei* Seabra.

One specimen from Compagnies Drift.

Agreeing in measurements with specimens from the Orange River (Upington District) referred by Oldfield Thomas to *N. bocagei*.*

* In the Kaffrarian Museum large series of *Nyctinomus* from the Eastern Cape Province and elsewhere have variable forearm measurements, but they intergrade and extremes often occur side by side in the same colonies: (a) larger, with a forearm averaging 52 mm., perhaps referable to *N. africanus*; and (b) smaller, with a forearm averaging 48–49 mm., provisionally referred to *N. bocagei*. Glover Allen (in litt., 15th June 1939) believes that the names *Nyctinomus condylurus* and *N. dubius* of A. Smith, 1833, should prove identifiable if one knew all of the South African species, and may perhaps replace other names now in current use.

In his recent Check List of African Mammals (p. iii), Allen notes that *N. condylurus* is probably valid for the larger *Nyctinomus* of South Africa (= *N. africanus*?); and that, although its status is uncertain, *N. dubius* is probably applicable to some one of the South African species of *Chaerephon* or *Nyctinomus*.

19. *Platymops haagneri umbratus* Shortridge.

One specimen from Kliphuis.

Shot whilst flying high amongst pine trees shortly after sundown. About three others were observed.

A second representative of a genus new to the Cape Province.

FAMILY CERCOPITHECIDAE.

20. *Papio comatus comatus* E. Geoffroy.*

(Plate VII.)

Specimens (skulls) from Hex River Estate.

* The Eastern Cape Baboon, which appears to have an almost consistently longer skull than typical *comatus* from the Western Cape (type locality "The Cape of Good Hope") and the darker form from South West Africa, has been separated under the name *P. c. orientalis* Goldblatt. In *P. c. comatus* the general coloration is browner (approaching rufescent in an old Kamiesberg male) than in *P. c. orientalis*. *P. c. orientalis* is paler (greyish-buff in an old male from Grahamstown) and more heavily grizzled.

I agree with Hewitt in objecting to Schwarz's choice of a Queenstown specimen as lectotype of *orientalis*, in view of the fact that over fifty Albany examples (including some females and young) were examined by Goldblatt, and only two males from Queenstown. Moreover, Queenstown was not even mentioned amongst the list of specimens that possess the characteristic rostro-cranial angle of *orientalis* (cf. Goldblatt, S. Afr. Journ. Sci., xxiii, p. 772, December 1926). Schwarz clearly should have chosen an Albany specimen (especially since comparative material is so easily obtainable from that region), and I therefore designate as a substitute lectotype of *orientalis* an Albany specimen in the Kaffrarian Museum (K.M., No. 1686 d, a very large adult male from Atherstone, near Grahamstown, collected 12th April 1933).

A further reason for rejecting the Queenstown lectotype is because there is an adult male (mounted) in the Kaffrarian Museum from the Pirie Forest, near King William's Town (about 70 miles south-east of Queenstown), which differs from the Albany series in the hind feet being without a trace of blackish, and the hands and lower forearms only slightly darkened. Without further Pirie and Queenstown material it is impossible to tell whether dark or grey feet are in any way locally constant characters in the North-Eastern Cape Province. The skull of a male from Kubusie (within 25 miles of King William's Town) is shorter than in Albany and Bedford specimens, and approaches typical *comatus* in this respect.

Papio comatus ruacana subsp. n.

I propose the above name for the race from Damaraland, the Kaokoveld, and S.W. Angola—Baboons were observed on the Angola side of the Rua Cana Falls of the Cunene River. General coloration in *ruacana* more ochraceous than in either of the southern races and very much darker dorsally, a broad and well-defined area extending along the centre of the back. In both *comatus* and *ruacana* there is a heavier suffusion of black on the feet, hands, and forearms than in *orientalis*.

FAMILY MUSTELIDAE.

21. *Ictonyx orangiae orangiae* Roberts.

Specimens from Compagnies Drift, Het Kruis.

The specimens from Compagnies Drift (Lamberts Bay) are topotypical of *I. orangiae arenarius*, but I can see no distinguishing characters.

Type (in the Kaffrarian Museum): No. 3646, adult male, collected 23rd June 1927, at Otjiwau (10 miles north of Kaoko-Otavi), Kaokoveld. Dimensions of type: H. & b. 850, Tl. 540, Hf. 210, Ear 57 mm.

P. c. ruacana is a relatively short-skulled race, like typical *comatus*, but with somewhat broader nasals. Greatest skull length (of No. 3993, a large male, topotype, also from the Kaokoveld) 215 mm. Breadth across nasals 52.5 mm.

Eight adult uniformly coloured specimens (4 ♂♂ from the Kaokoveld; 1 ♂ from Karibib, S. Damaraland; also 3 unmeasured skins and 1 skull, ♂♂, from Gobabis District.

Of other accredited races of *Papio comatus* from Southern Africa, *P. c. rhodesiae* Haagner from Southern Rhodesia, *P. c. transvaalensis* Zukowsky from near Messina, northern Transvaal, and *P. c. jubilaeus* Schwarz from Misale, close to the Northern Rhodesia-Nyasaland Border, are regarded by Schwarz as synonyms of *P. c. griseipes* Pocock, described from a captive specimen that was supposed to have come from Potchefstroom, southern Transvaal. I agree with Schwarz in suspecting that the type of *griseipes* originated from the northern Transvaal or Southern Rhodesia, rather than so far south as Potchefstroom. (There is a grey-footed Baboon, "adult male, mounted," in the McGregor Museum from Southern Rhodesia.)

P. c. jubilaeus (cf. E. Schwarz, Ann. Mag. N.H., ser. 10, vol. xiv, p. 260, 1934) from east-central Northern Rhodesia is now regarded by its describer as a synonym of *griseipes*; it should therefore be compared with *P. c. chobiensis* Roberts, in view of the fact that a specimen in the Kaffrarian Museum from the middle Kafue River in central Northern Rhodesia, collected by Gordon Lancaster, is indistinguishable from topotypes of *P. c. chobiensis*, males of which approach *P. c. orientalis* in skull length. In a series, 3 from the Chobi River, Caprivi, and 3 from the north bank of the Zambesi, Sesheke District, west of Livingstone, colour variation would seem to indicate that *chobiensis* and *ngamiensis* are inseparable. Even before the bridge was built, the "Rain Forest" Baboons were able to cross the Zambesi, via the Victoria Falls, at low water; and occur there, as elsewhere east of the Gonye Falls, on both sides of the river. Haagner (S. Afr. Mamm., p. 17, 1920) records *P. c. rhodesiae* (= *griseipes*) from the Kafue Flats; and Schwarz refers specimens from Kabulabula, west of Livingstone, and from various parts of Southern Rhodesia and Portuguese East Africa, to as far south as Lourenço Marques, to *griseipes*. Baboons referable to *chobiensis* (or perhaps the earlier described *jubilaeus*) are essentially tree-dwellers and inhabit regions where there are often neither rocks nor hills; and I incline to the belief that the Forest Baboons of the Caprivi and Northern Rhodesia will prove distinguishable from *griseipes* from the more open and frequently rocky regions of Southern Rhodesia.

22. *Ictonyx striatus striatus* (Perry).

Specimens from Citrusdal, Travellers Rest, Clanwilliam.

An external distinction (in this region) between *I. orangiae* and *I. striatus* appears to be the more slender and relatively longer foreclaws in *orangiae*.*

(23. *Mellivora capensis capensis* (Schreber).)

Sparsely but apparently widely distributed.

Van Zyl (Compagnies Drift) records an instance of a Ratel attacking and killing a Caracal.

FAMILY LUTRIDAE.

(24. *Anonyx capensis capensis* (Schinz).)

Said to occur in the Olifants and Berg Rivers, and occasionally along the coast.

(25. *Lutra maculicollis maculicollis* Lichtenstein.)

Probably more numerous than *Anonyx capensis* in the North-Western Cape Province. One (at least) of the two species of Otter is plentiful in the Olifants River.

Comatus, orientalis and *ruacana* favour rocky, often entirely treeless, hill country.

If there should prove to be a distinguishable southern Transvaal form of *comatus*, the name *occidentalis* Goldblatt might perhaps be revived for it, since the lectotype (a skull in the Witwatersrand University) came from Rustenburg, west-central Transvaal, of which *P. c. nigripes* Roberts from the Magalakuin River, north-western Transvaal, may be a synonym.

Notwithstanding very much smaller skulls and more slender limbs, body dimensions of specimens in the Kaffrarian Museum referred to *Papio cynocephalus* are not appreciably less than of *Papio comatus*. The foreshortened, almost vervet-like skull of the former would seem to signify more than a specific difference between *P. (Chaeropithecus) cynocephalus* and *P. comatus*.

The skin of a newly born specimen of *P. cynocephalus* is clothed with pure white woolly fur, except on the crown where the hairs are dusky slate basally. An equally young example of *P. comatus* is sparsely clothed with lanky blackish hairs.

P. cynocephalus, as its long limbs indicate, is extremely agile. It is probably one of the swiftest of all the *Primates*, and will run like a Jackal when hunted; only taking to trees in a last emergency.

It may be accepted that *P. cynocephalus* does not occur in Southern Rhodesia, nor anywhere in Portuguese East Africa south of the Zambesi.

* The occurrence side by side of (apparently) closely allied forms, although unusual, is not unique; and there may be structural differences (e.g. in the "bacula") to account for the presumed stability of *Ictonyx striatus*, *orangiae*, and *kalaharicus*.

FAMILY CANIDAE.

(26. *Otocyon megalotis megalotis* (Desmarest).)

Occurs in the coastal sand-plains, but apparently not plentiful. Cubs resemble adults in colour, being smoky grey with blackish on limbs and tail; owing to the absence of rufous coloration anywhere, Delalande's Fox cubs cannot be mistaken for those of Jackals (*C. mesomelas*) or Silver Foxes (*V. chama*).

27. *Canis (Thos) mesomelas mesomelas* (Schreber).

Specimens from around Clanwilliam.*

28. *Vulpes chama* (A. Smith).

Specimens from Compagnies Drift and around Clanwilliam

Plentiful in the coastal sand-veld. I found Silver Foxes particularly numerous around Lamberts Bay, and Mr. van Zyl, at Compagnies Drift, informed me that he regarded them as innocuous and was satisfied that they did not, habitually at any rate, attack lambs. There is, of course, no knowing what a hungry animal might do under exceptional circumstances. Stomach contents indicate that they feed mainly upon small rodents, insects (locusts, beetles, etc.), lizards, small ground-nesting birds, and, more occasionally, the young of hares (and of Suricats—C. H. B. Grant). These tiny foxes must account for countless numbers of gerbils and other plague-carrying rodents, and should, like Delalande's Fox, be protected by legislation.

Apart from difference in size, there is some similarity between the cubs of Black-backed Jackal (*C. mesomelas*) and Silver Fox (*V. chama*). In quite young cubs of approximately the same age, the Jackal is woolly throughout, and dull rufous-brown in general coloration with

* "Habitat modification" is well exemplified in *C. mesomelas*. In arid regions these Jackals become bleached-looking. *C. mesomelas arenarum* from South West Africa is markedly paler than typical *mesomelas*, but individuals from Little Namaqualand and other intervening regions show gradation between saturate and desert coloration extremes. *C. mesomelas achrotes* from Rooibank (Walvis Bay hinterland) may prove to be inseparable from *arenarum*; the Namib Desert is a coastal strip of particularly arid country, averaging only 30 miles in width, although climatically and physically quite unlike the interior highlands. The type of *achrotes* is certainly considerably paler than any specimens of *arenarum* collected, but it may be an unusually light coloured individual, since a topotype recently received by the Kaffrarian Museum from Walvis Bay is not much paler than average inland specimens.

a smoky tinge due to a scattering of slightly longer fine black hairs; the head is less contrastingly rufous than in the Fox; but the legs and feet are uniformly rufous; the tail relatively short-haired and tapering, as in the puppies of dogs.

In Silver Fox cubs the general coloration is buffy (much more pallid); the greyish grizzling on the back and forehead, due to an admixture of white-tipped hairs, being already manifest; and, except on the head which is contrastingly rufous, the fur is much less woolly. The legs are pale buffy, shading to rufous on the upper forearms and thighs only. Tail, at least a third longer than in the young Jackals, cylindrical and starting to become bushy at an early age.

FAMILY VIVERRIDAE.

29. *Genetta genetta felina* (Thunberg).

Specimens from Travellers Rest, Compagnies Drift, and around Clanwilliam.

Little Namaqualand specimens and the present series match Eastern Cape Province material.

30. *Atilax paludinosus paludinosus* (G. Cuvier).

Specimens from Compagnies Drift.

The Water Mongoose extends to the coast around Lamberts Bay. I believe it to be quite plentiful along the banks of the Olifants River.

31. *Cynictis penicillata penicillata* (G. Cuvier).

Specimens from Compagnies Drift, Klaver, Het Kruis.

As may be expected, there is gradual intergradation between *C. p. penicillata* and *C. p. pallidior*; the extremes, however, are very distinct.

32. *Myonax pulverulentus pulverulentus* (Wagner).

Specimens from Travellers Rest, Klaver, Kliphuis, Redlinghuis, Compagnies Drift.

The Lamberts Bay (Compagnies Drift) series is topotypical of *Myonax p. maritimus*, and the specimens in this collection form in every respect a connecting link between what has hitherto been regarded as typical *pulverulentus* and *ruddi*. In one Lamberts Bay specimen there are traces of a dark dorsal patch which renders it indistinguishable from typical summer specimens of *M. p. ruddi* from northern Little Namaqualand and the Kamiesberg. On the

other hand, over half a dozen of the Namaqualand specimens match exactly average specimens from the Olifants River basin. The feet, and the lower parts of forearms and hindlegs of all in the present series are darker than in average specimens from the Eastern Cape Province (to at least as far south as Port Elizabeth and Grahamstown), and the tail tip, to the extent of a few dozen hairs only in some instances, is blackish.* In juvenile specimens, however, both from Little Namaqualand and from Lamberts Bay, the black tail tip appears to be consistently well defined.

33. *Suricata suricatta namaquensis* Thomas and Schwann.

Specimens from Compagnies Drift.

The present series matches exactly Little Namaqualand material.†

According to Mr. van Zyl (Compagnies Drift), the Suricat only

* But there is an Eastern Cape specimen in the Kaffrarian Museum (labelled "Kaffraria") with the feet every bit as dark as in any of the Western Cape series, and with a small but well-defined black tail tip. "South" Eastern Cape specimens from Albany and Bedford Districts have slightly more darkly speckled feet and toes than average Kaffrarian examples. ("*Herpestes*" *punctatissimus*, described by Temminck from Algoa Bay in 1853, is presumably a synonym of *Myonax pulverulentus*; an Algoa Bay specimen of *pulverulentus*, lent for examination by the Port Elizabeth Museum, is indistinguishable from Albany and Bedford material.)

Since the type of *pulverulentus* came from the Western Cape Province ("Cape of Good Hope"), I shall not be surprised if material from the Cape Peninsula and other adjacent regions indicates that the dusky-footed *maritimus* is a synonym of typical *pulverulentus* (Redlinghuis is approximately half-way between Lamberts Bay and Cape Town), and the uniformly grey and more distant form, from Kaffraria and the interior high-veld, northwards to Basutoland, synonymous with or not very distinct from the geographically adjacent *M. p. basuticus*.

Large series of *Myonax pulverulentus* in the Kaffrarian Museum, numbering over 60 specimens, show gradual colour intergradation between the variably semi-melanistic *ruddi* in the north-west and the uniformly grey form, which I refer to *basuticus*, in the north-east; typical *pulverulentus* being the connecting link between them.

R. I. Pocock (Fauna of British India, vol. i, p. vii, Preface, 1939) writes: "Where a complete series of examples of a species spread over a wide diversified area is available, it is the custom to select for scientific denomination the best differentiated local races, leaving the equally interesting intermediate forms without the trinomial symbol . . . large numbers of names, although without real significance, have to be reckoned with and investigated by the serious student, thus leading to waste of time and making his task, difficult enough already, still more exacting and arduous."

† The two most distinct and geographically distant known forms of *Suricata* are *S. s. hahni* from the western Kalahari and *S. s. lophurus* from the Eastern Cape Province. When the Windhuk Zoo was in existence a number of specimens of *hahni* were kept; as a result of captivity, the hair had grown profusely and they had become almost indistinguishable from *lophurus*.

crossed the Olifants River from the north and established itself around Lamberts Bay in 1925 after the large Olifants River dam was completed. Previously a wide permanently flowing river, the lower reaches are now almost entirely diverted for irrigation purposes. In consequence it no longer forms a barrier against the migrations of small mammals. The Suricat is to-day extremely plentiful in soft sandy country around Lamberts Bay, to as far inland as Graaffwater. It excavates warrens in soft sand, whereas in Namaqualand it usually selects hard patches of ground even where the surroundings are sandy. It has not, as yet, extended farther south along the basin of the Olifants River. Around Lamberts Bay, as elsewhere where both occur, *Suricata* and *Cynictis* live in close association.

FAMILY PROTELIDAE.

34. *Proteles cristatus canescens* Shortridge.

Specimens from Kliphuis, Clanwilliam, Klaver.

FAMILY FELIDAE.

35. *Felis lybica cafra* Desmarest.

Specimens from Clanwilliam, Compagnies Drift.

The young of *F. l. cafra* from the North-West Cape Province are sometimes almost as strongly striped and spotted as *Felis nigripes*; and the markings are somewhat similar.*

(36. *Felis (Panthera) pardus melanotica* Gunther.)

Leopards occur in the Cedarberg and in other sparsely populated mountainous regions in the North-West Cape Province.

37. *Caracal caracal caracal* (Schreber).†

Specimens from around Clanwilliam.

* A very young kitten from Kovares, S. Kaokoveld, referable to *F. l. namaquana* or *xanthella*, is pale rufous narrowly and indistinctly banded with deeper rufous, the leg-bars only being dusky.

† Cape Province material (34 specimens) indicates that *C. caracal coloniae* is inseparable from the typical race. Among considerable series in the Kaffrarian Museum there is some amount of individual colour variation: Caracals from South West Africa average, as may be expected, slightly paler and more brightly rufous (less grizzled); on the other hand, specimens from the Caprivi and Northern Rhodesia are hardly distinguishable from the Cape series.

It is easy, when unaccompanied by more positive characteristics, to overestimate

FAMILY OTARIIDAE.

(38. *Arctocephalus pusillus* (Schreber).)

The Cape Sea-lion is said to breed on Elephants Rock off the mouth of the Olifants River.

FAMILY ORYCTEROPODIDAE.

(39. *Orycteropus afer afer* (Pallas).)

The Aardvark occurs very sparsely inland from Lamberts Bay, and elsewhere in the coastal and subcoastal sand-veld.

FAMILY LEPORIDAE.

40. *Lepus capensis capensis* Linnaeus.

Specimens from Compagnies Drift.

Underparts more strongly suffused with yellowish rufous than in *L. capensis granti* from Little Namaqualand.

Plentiful in the coastal sand-veld belt around Lamberts Bay.

Some specimens were much infested with ticks.

41. *Lepus saxatilis saxatilis* F. Cuvier.

Specimens from Travellers Rest, Kliphuis, Compagnies Drift.

Plentiful in rocky and mountainous country; scarce in the coastal sand-veld (around Compagnies Drift, etc.).

Although normally rather sluggish, these large hares show considerable speed when coursed by dogs: they can double and turn with great agility; I have seen them outpace greyhounds in rocky country. When running, the long legs give them the appearance of small antelopes; hence the Afrikaans name "RIBBOKHAAS."

the significance of saturate and desert coloration, when due to climatic (altitudinal or rainfall) conditions over unsatisfactorily small, patchy, and overlapping regions which can have little geographical bearing. Widely distributed mammals, especially large and medium-sized forms, cannot *very often* be sufficiently isolated within ill-defined and extremely restricted areas to justify multiplicity in sub-specific denomination. A colour change definitely due to environment is not necessarily a slow evolutionary process. Caracals from most, if not all, supposedly different faunal regions in Southern Africa, in captivity, would without much doubt become indistinguishable in a year or two. I am of opinion that the wandering habits of the larger carnivora are not taken into consideration sufficiently. (There are, for instance, no less than 36 described subspecies of *Lycan pictus*, perhaps the most migratory of all African mammals, 15 from East Africa alone.)

42. *Pronolagus crassicaudatus australis* Roberts.

Specimens from Travellers Rest, Kliphuis.

Kliphuis is 11 miles from Clanwilliam, the type locality of *P. crassicaudatus australis*; Travellers Rest (7 miles from Kliphuis) is within sight of Klaver, the type locality of *P. crassicaudatus mulleri*. Klaver and Clanwilliam are 30 miles apart and are both situated on the banks of the Olifants River. *P. c. mulleri*, in my opinion, cannot be distinguished from *P. c. australis*. In the present series from Travellers Rest and Kliphuis (which are inseparable) the amount of smoky blackish suffusion at the end of the tails is variable, some having hardly any trace of it.

"Red Hares" often come out in the early mornings and early evenings as well as by night.

FAMILY MUSCARDINIDAE.

43. *Graphiurus ocularis ocularis* (A. Smith).

Afrikaans (Hottentot extraction): NAMTAP.

One specimen from Clanwilliam.

There are no more savage small rodents than African Dormice; in captivity any other small mammal placed in the same cage with *G. ocularis* is at once attacked furiously; it will kill and feed upon species considerably larger than itself.

FAMILY CRICETIDAE.

44. *Desmodillus auricularis auricularis* (A. Smith).

Specimens from Citrusdal, Het Kruis, Compagnies Drift.

There is individual colour variation, but less than in Little Namaqualand material.

45. *Gerbillus (Gerbillus) pæba broomi* Thomas.

Specimens from Nieuwoudtville, Het Kruis, Citrusdal, Compagnies Drift.

As in *Desmodillus*, there is some amount of individual colour variation, but less so than in the Little Namaqualand series.

46. *Taterona afra afra* (Grey).

Specimens from Nieuwoudtville, Travellers Rest, Kliphuis, Het Kruis, Compagnies Drift.

The Compagnies Drift (Lamberts Bay) series is topotypical of *T. afra gilli*.

Plentiful on the coastal plains and in cultivated sandy country farther inland; also ascending to the mountain plateaux and on to the western edge of the interior highveld. Relatively scarce around Nieuwoudtville, which may approximate to the farthest inland extension of its range. Gregarious; the warrens being often scattered over large tracts of country. A white forehead spot is not unusual.

47. *Otomys irroratus irroratus* (Brants).

Specimens from Travellers Rest, Kliphuis, Hex River Estate, Citrusdal, Clanwilliam, Compagnies Drift, Elands Bay.

There are three jet black melanistic specimens from Elands Bay. This "Vlei" *Otomys* extends close to the coast at Lamberts Bay along the banks of the Jakkals River, in the bed of which there are small disconnected pools of surface water. To some extent nocturnal here (hot season).

48. *Otomys karoensis* Roberts.*

Specimens from the "Cold Bokkeveld" Mountains (S.E. of Citrusdal).

A mountain species: diurnal; inhabiting belts of dry rushes in heathy country on high mountain slopes. Apparently local.

49. *Myotomys unisulcatus unisulcatus* (F. Cuvier).

Specimens from Travellers Rest, Het Kruis, Enderskuil, Compagnies Drift.

The series from Compagnies Drift (Lamberts Bay) is topotypical of *M. unisulcatus bergensis*, with which specimens from southern Little Namaqualand (Kameelboom, Kamiesberg, etc.) may also be compared.

(50. *Parotomys brantsii* subsp.)

Colonies of *Parotomys* were observed on the highveld between Nieuwoudtville and Travellers Rest. North of the Olifants River it is said to occur in the lowveld, near the coast.

The race in this region may be referable to *P. brantsii pallida*, the southern Little Namaqualand subspecies.

When alarmed *Parotomys* (and *Liotomys*) dart back into their burrows with little squeaks of alarm.

* I can find no appreciable difference, cranial or otherwise, between these specimens and some "dryveld" *Otomys* from near King William's Town which have been compared and seem to correspond with the type of *Otomys tugelensis saundersiae*.

51. *Dendromus mesomelas pumilio* (Wagner).

Specimens from Redlinghuis and Tulbagh.

In a Tulbagh specimen (♂) there is no trace of a dorsal stripe.

In two out of five Redlinghuis specimens (♂, ♀ imm.) the dorsal stripe is only just discernible. In the other three (♂♂, ♀) the stripe is relatively well defined.

Underparts: hairs dark slate basally, tipped with buffy white.*

52. *Poemys melanotis capensis* Roberts.

Specimens from Het Kruis, Redlinghuis, Citrusdal.

Habitat: more or less open sandy grass country; living in small burrows and locally plentiful.

The presence or absence of a dark frontal patch in southern forms of *Poemys* would seem to be an individually variable characteristic. In three out of twelve specimens from Het Kruis dark frontal markings are present but ill defined; in one out of two from Redlinghuis this forehead mark is relatively well defined. The type (from Wolseley), as in the remainder of the present series, is without a frontal patch. Faint dusky ocular rings are present.†

* The type of *Dendromus pumilio* (a specimen without a dorsal stripe) was described from "The Cape of Good Hope" (presumably the Cape Peninsula, which may be fixed as the type locality).

Typical *Dendromus mesomelas* was described from the Zondags (Sundays) River, Eastern Cape Province, which enters the sea about 25 miles N.E. of Port Elizabeth. Eastern Cape Province specimens in the Kaffrarian Museum (from the Pirie Forest and East London), which I refer to typical *mesomelas*, although very similar dorsally to Western Cape Province material, differ markedly in having pure white underparts without slaty bases to the hairs; and are on an average somewhat smaller in size, the hind feet being definitely smaller.

† With regard to Cape material of *Poemys melanotis* and its described subspecies, the two extremes are clearly the typical race from Natal and the North-East Cape Province, and *P. m. insignis* (without ocular rings) from Little Namaqualand (N.W. Cape).

P. m. capensis may be accepted as an intermediate form from the extreme south. But, in my opinion, *P. m. thorntoni*, without consistent distinguishing characters, and matching examples from the N.E. Cape (Kaffraria, etc.), is redundant.

In seven topotypes of *P. m. thorntoni* (from Port Elizabeth) four are strongly washed with rusty brown; the other three agree with the type in their grey coloration. In one specimen the frontal patch is well defined; in three specimens it is less strongly defined; in the other three it is absent.

Large series of *Poemys* in the Kaffrarian Museum (over 150 specimens from widely distant regions) show every gradation of colour (both in *P. melanotis* and *P. nigrifrons*) between ash-grey and rusty-rufous, indicating that this is individual variation, and therefore without diagnostic value.

The following external characters and differences in habits distinguish *Poemys* from *Dendromus*:—

(a) *Poemys* :

Fifth hind toe with nail.

Ears large, angular and "bat-like"; naked and bicoloured—greyish and blackish (as in *Malacothrix*).

Hair relatively silky, colour grey to rusty.

Tail, as a rule, only slightly longer than head and body.

Eyes larger, usually surrounded by a dark ocular ring.

Occurs both in forest and in treeless grass country; lives in small burrows in the ground.

Although more closely allied to *Dendromus*, *Poemys* is in some respects intermediate between *Dendromus* and *Malacothrix*.*

(b) *Dendromus* :

Fifth hind toe with claw.

Ears relatively small and oval (as in *Steatomys*); clothed above with short chestnut coloured hairs.

Hair woolly, colour chestnut.

Tail considerably longer than head and body.

Eyes smaller, no ocular ring.

More arboreal than *Poemys*; usually occurring close to trees or fairly high bushes: makes a grass nest (similar to that of an English Dormouse) in bushes, hollow tree stumps, etc.

53. *Steatomys pentonyx* (W. L. Slater).

Specimens from Citrusdal, Het Kruis.

Locally plentiful in more or less open subcoastal grass and bushveld.

If kept in captivity with Elephant Shrews, or other small rodents of its own size, *Steatomys*, which is a savage animal, will soon start killing and partly devouring them.

S. pentonyx was originally referred by Slater to the genus *Malacothrix*. If this species is ever found to occur in the Eastern Cape Province it may have to be regarded as a synonym of *S. krebsi*.†

* As opposed to *Poemys* and *Malacothrix*, *Dendromus*, when handled, will often attempt to bite, although, unlike *Steatomys*, it is not aggressively savage.

† I am not satisfied about the status of *Steatomys krebsi*, which is presumed to have come from the Eastern Cape Province for no apparent reason except that Krebs was known to have collected thereabouts during his travels. There is no authentic record of the occurrence of any species of *Steatomys* from the Eastern

FAMILY MURIDAE.

54. *Acomys subspinosus* (Waterhouse).

Specimens from Kliphuis, Hex River Estate, Cold Bokkeveld (S.E. of Citrusdal).

Habitat: accumulations of loose rocks or boulders on heathy slopes and plateaux, especially in the vicinity of small mountain streams. Most plentiful at rather high altitudes; one specimen, however, was trapped at the base of a hill (Hex River Estate) in low-lying rocky country. Nocturnal: more local and much less plentiful than *Myomys verroxii*.*

When handled in the flesh the spines render *Acomys* slippery and lizard-like; skin fragile, as in *Petromus*. Head (ear to snout) markedly longer than in *Mus*.

55. *Aethomys namaquensis namaquensis* (A. Smith).

Specimens from Travellers Rest, Kliphuis, Citrusdal, Hex River Estate, Het Kruis.

Series (from Travellers Rest and Kliphuis) doubtless referable to *A. namaquensis klaverensis*.

Everywhere plentiful where rocky hills occur.

56. *Myomys (Myomyscus) verroxii* (A. Smith).†

Specimens from Kliphuis, Citrusdal, Hex River Estate.

Habitat: coastal and subcoastal hill and mountain ranges of the Southern Cape Province. Range approximating to that of *Acomys* Cape Province. The recorded locality for *krebsi* in 1852, "The Interior of Caffraria," might equally have stood for Natal, The Orange Free State, or, in fact, anywhere in Southern Africa. [See Editor's note on p. 99.]

Various assumed races of *krebsi* have since been described, although the type locality for the original subspecies is entirely conjectural.

* The range of *Acomys subspinosus* coincides almost exactly with that of *Myomys verroxii*. They both inhabit the coastal and subcoastal mountains of the Southern Cape Province, from the Pakhuis Pass (Kliphuis), a northern spur of the Cedarberg Mountains which extends as far north as the Olifants-Doorn River junction in the west, to as far as Knysna (Grant) in the east.

† The genotype of *Myomys* is *M. colonus*; some years ago three female specimens were trapped near King William's Town in "vlei" country, which, although otherwise apparently resembling *Mastomys coucha*, had a mammary formula agreeing with that recorded for *Myomys colonus* (10: 6 pect., 4 ing.), with a short hiatus between the pectoral and inguinal mammae. They were sent to the British Museum and were stated at the time to correspond with the type of *colonus*.

No further examples with a similar mammary formula have since been collected, and it is suggested that these specimens (including the type, and a small series in

subspinosus (extending from the northern spurs of the Cedarberg Mountains in the west, around the Cape of Good Hope, to Knysna (Grant) in the east).

Myomys verroxii hides by day in crevices in the more sheltered sides of rocky hills where there is plenty of bush and scrub in preference to the more arid slopes, which are equally favoured by the less conservative *Aethomys namaquensis*. This long-tailed Rock Rat is apparently local even within its range. At Kliphuis it was often trapped in long grass and tangled undergrowth in the higher valleys under precipitous cliffs or piled up rocks. Although also occurring at the base of hills in comparatively low-lying country, it does not extend on to the plains.

According to W. L. Sclater, the English vernacular for *Mastomys coucha* is "The White-nosed Rat," but that name would be more

the British Museum from Zululand and elsewhere) may be ordinary Multimammate Mice with a subnormal number of mammae.

But, since the type of *colonus* and only other material supposed to agree with it appear to be in the British Museum, it remains for someone in that institution to investigate and clear up the matter. It may be that more helpful material will be forthcoming when further systematic collecting has been done in the Eastern Cape Province. If *Mastomys coucha* proves to be inseparable from the earlier described *Myomys colonus*, the genus *Mastomys* will become a synonym of *Myomys* (which was described higher up on the same page), and *Myomys colonus* would also replace *Mastomys coucha* for the typical Multimammate Mouse; the subspecific name *coucha* being perhaps available for the Griqualand West race. *Myomys shortridgei* (a distinct and well-defined species possessing 10 mammae, recorded in error by myself as a subspecies of *colonus*), which occurs in association with the Multimammate Mouse close to the Okavango, is a definitely local swamp rat; whereas the Multimammate Mouse is plentiful and widely distributed in that region both in damp and dry country. I have recently examined a small series of Multimammate Mice from Algoa Bay (the type locality of *Myomys colonus*), and a subadult female possesses at least 16 mammae. But these Algoa Bay specimens (lent by the Port Elizabeth Museum) cannot be regarded with certainty as topotypical of *colonus*, since *colonus* may be restricted to swampy country, and, like *shortridgei*, occur in suitable situations side by side with the more ubiquitous *coucha*.

Myomyscus subgen. n.

In the meanwhile I do not think the long-tailed (*Aethomys*-like) *Myomys verroxii* and allied rock-dwelling forms should remain in the same subgenus as relatively short-tailed swamp rodents, which, except for a different mammary formula, closely resemble Multimammate Mice (e.g. *Myomys shortridgei*); and I propose the above name for the *Myomys verroxii*-*M. granti* group.

Genotype: (in the Kaffrarian Museum) *Myomys (Myomyscus) verroxii*; No. 2935, adult ♂; H. & b. 122, Tl. 165, Hf. 25.5, Ear 19 mm.; from Kliphuis, 11 miles N.E. of Clanwilliam, N.W. Cape Province; 14th December 1937.

applicable to *Myomys verroxii* which has a markedly silvery-white nose.

As in *Mastomys coucha* (and *Petromyscus*), the young are smoky-slate in colour. Mammae 10 (6 pect., 4 ing.).

57. *Leggada minutoides minutoides* (A. Smith).

Specimens from Travellers Rest, Clanwilliam, Kliphuis, Citrusdal, Hex River Estate, Compagnies Drift.

58. *Mus musculus musculus* Linnaeus.

Specimens from Nieuwoudtville, Travellers Rest, Hex River Estate, Compagnies Drift.

There are no examples in this series with whitish underparts corresponding with a percentage of the Kamiesberg (Little Namaqualand) material.

59. *Rattus rattus alexandrinus* (E. Geoffroy and Audouin).

One specimen from Hex River Estate.

This imported House Rat is not as yet widely distributed along the basin of the Olifants River; but it occurs in some of the towns, villages, and farms—Clanwilliam, Citrusdal, Hex River Estate, etc., along the main lines of communication. Apparently unknown around Lamberts Bay.

60. *Rhabdomys pumilio pumilio* (Sparrman).*

Specimens from Nieuwoudtville, Travellers Rest, Kliphuis, Citrusdal, Hex River Estate, Clanwilliam, Compagnies Drift.

FAMILY BATHYERGIDAE.

61. *Bathyergus suillus suillus* (Schreber).

Hottentot: 'KNOGAS (Lamberts Bay).

Specimens from Travellers Rest, Klaver, Het Kruis, Compagnies Drift.

The above large series is referable to *B. suillus intermedius*, typically from Klaver; but adult specimens are equal in size and otherwise

* If *Rhabdomys* from the Western Cape Province proves to be distinguishable from typical *pumilio* from Tsitzikama Forest (Snake River), Knysna, it would seem that one of the two names, *donovani* (Lesson) or *major* (Brants), both described in 1827 from "The Cape of Good Hope," will have to be revived. *R. pumilio meridionalis* (Wroughton), also from the Cape of Good Hope (Tokai), was described many years later.

similar to Cape Peninsula material. The white forehead spot is variable in size and as often as not absent; it is sometimes accompanied by less noticeable throat patches. This forehead spot occurs quite frequently in specimens from the Cape Flats, so it is not a geographical variation. There is no connecting link between *B. s. suillus* and the considerably smaller *B. j. janetta*; the two being entirely distinct species.*

This Giant Mole-rat is extremely plentiful in the North-West Cape Province. It is subcoastal as well as coastal in the sandy low-veld and extends inland along the valley of the Olifants River to beyond Citrusdal. Although *Bathyergus suillus* ascends the slopes of fairly high sand-dunes, on the higher mountain plateaux only *Georchus* occurs.

Mound concentrations were observed chiefly in cultivated or recently ploughed lands and in stretches of soft sand, or alluvial grass flats close to the banks of rivers and streams. In some places along the valleys of the Olifants and Doorn Rivers the large white "mole-hills" occur in such numbers as to form a conspicuous feature of the landscape; in fact, large areas are often so honeycombed by the mounds and their inter-communicating tunnels that one sinks two feet or more into the sand at almost every step if an attempt be made to walk across the warrens.

Unlike *Georchus* and *Cryptomys*, *Bathyergus* is seldom turned out of the ground during the ploughing season, owing to the greater depth of the main burrows. In addition to wild bulbs, grass roots, and other indigenous tubers, *Bathyergus suillus* feeds upon most kinds of root crops, especially potatoes, and it ranks among the most serious of agricultural pests in the Western Cape Province. As opposed to *Georchus* and *Cryptomys*, it does not store up food below ground.

A specimen kept alive for a short period made a chattering noise whilst burrowing and would turn and snap savagely if interfered with. It did not attempt to progress more than a yard or two above ground, but started to dig with its fore feet almost at once, scuffling the loose sand back with its hind feet. The short tail with hori-

* There is a belt of low-lying country to the north of the Olifants River mouth, approximately 20 miles in width (between Van Rhynsdorp District and southern Little Namaqualand), known as "The Hardeveld," intersected by small flowing salt rivers, which appears to form a barrier separating *B. janetta* in the north from *B. suillus* in the south. (Neither *Petromus* nor *Petromyscus* extend south of this barrier.)

zontally flat rows of bristles on either side is an aid in throwing back the sand. If caught in a trap it will often break its incisor teeth against the iron. The halves of the lower jaw, although not altogether ankylosed, do not enable the lower incisors to separate widely as in *Georychus* and *Cryptomys*. The cheek and other cranial muscles are enormously developed. Even newly born animals, like young parrots, can bite severely.

Bathyergus, in common with other South African Mole-rats, appears to be able to see indistinctly for a short distance; and if the head be touched it will close the eyelids. The small circle of bare skin around the ear orifice protrudes slightly, the opening itself being directed backwards and downwards.

One specimen (No. 2726) was a buff-white, pink-eyed albino.

62. *Georychus capensis capensis* (Pallas).

Afrikaans: KOHLMOL (also individuals of *Bathyergus* with a white forehead spot).

Specimens from Nieuwoudtville, Kliphuis, Citrusdal.

The Nieuwoudtville examples (alt. 3500 feet) appear to be the first authentic high-veld record for typical *G. capensis*; I believe them to be also the north-western record.

Although coastal around Cape Town, in the North-West Cape Province *Georychus* appears to favour more inland districts and extends from the middle Olifants River Valley on to the mountain plateaux, as at Kliphuis and Nieuwoudtville. Around Nieuwoudtville, where it is local and not very plentiful, mounds were observed mostly in ploughed land. In the low-veld *Georychus* seems to be very much scarcer than *Bathyergus*, but, since, where the two occur together, it is not always easy to distinguish between the mounds of *Georychus* and *Bathyergus*, it may be more widely distributed than appeared to be the case.

Georychus is unknown to residents around Lamberts Bay, and I did not hear of its occurrence anywhere along the coast in this region. The mounds are often nearly as large as those of *Bathyergus*; and the burrows approximate in diameter to those of *Bathyergus*, rather than of *Cryptomys hottentotus*. Accumulated stores of bulbs, iris corms, etc., all smaller than hazel-nuts, were found in excavated burrows.

Georychus apparently does not differ in size sexually so much as do *Bathyergus* and *Cryptomys*; the largest specimen in the present

series is a female. The white forehead spot (occasionally almost absent) and other white head markings vary individually in North-West Cape material, which otherwise matches closely Cape Town specimens.*

63. *Cryptomys hottentotus hottentotus* (Lesson).

Specimens from Nieuwoudtville, Travellers Rest, Kliphuis, Citrusdal, Hex River Estate, Compagnies Drift.

Widely distributed throughout the North-West Cape Province and plentiful both on mountain plateaux and in the low-veld. Plentiful around Nieuwoudtville (high-veld), and extending (sparsely) as far inland as Calvinia.†

Where all occur together, the mounds of *Cryptomys*, *Georchus*, and *Bathyergus* may often be found in close association, the different size of the tunnels presumably eliminating actual contact.

FAMILY HYSTRICIDAE.

(64. *Hystrix africae australis africae australis* Peters.)

Widely distributed; apparently plentiful in the mountains; numerous shed quills observed around Hex River Estate.

FAMILY PROCAVIIDAE.

65. *Procapia capensis capensis* (Pallas).

Specimens from Travellers Rest, Kliphuis, Clanwilliam, Compagnies Drift.

FAMILY ELEPHANTIDAE.

(66. *Loxodonta africana africana* (Blumenbach).)

Elephant have been extinct in the North-West Cape Province for at least 150 years: I can find no record since Jacobus Coetse Jansz crossed the Olifants River in 1760 "for the purpose of shooting Elephant." All other big game has long since disappeared from this region.

* There is an albino specimen of *Georchus c. canescens* in the Port Elizabeth Museum.

† Albinism in *Cryptomys hottentotus* is not infrequent.

FAMILY HIPPOPOTAMIDAE.

(67. *Hippopotamus amphibius capensis* Desmoulins.)

There are local traditions of the past occurrence of Hippo in the lower Olifants River. The type of *H. amphibius capensis*, from the Berg River, is still preserved in the Paris Museum.

FAMILY SUIDAE.

(68. *Phacochoerus aethiopicus aethiopicus* (Pallas).)

I was informed by Mr. Visser (Hex River Estate) that skeletal remains, including tusches, of Wart-hog were discovered a few years ago in a Bushman cave not far from his estate, and sent to Stellenbosch University. This is the only record, so far as I am aware, of the former existence of Wart-hog in the North-West Cape Province.

FAMILY BOVIDAE.

69. *Sylvicapra grimmia grimmia* (Linnaeus).

Two specimens from Lamberts Bay.

There are plenty of Duiker in the Lamberts Bay Game Reserve; farther inland they seem to be restricted mostly to the Cedarberg and other mountainous regions.

70. *Oreotragus oreotragus oreotragus* (Zimmermann).

Specimens from Kliphuis.

Klipspringer are still fairly numerous among the mountains of the North-West Cape Province.

71. *Raphicerus campestris campestris* (Thunberg).

Specimens from Lamberts Bay Game Reserve and Compagnies Drift.

Plentiful in the Game Reserve; more sparsely distributed elsewhere along the coastal sand-plains.

(72. *Raphicerus (Nototragus) melanotis* (Thunberg).)

Hottentot: 'TSAUGHAT.

In the Western Cape Province the Grysbok extends as far north as the northern spurs of the Cedarberg. It is well known around Kliphuis, but believed not to be found anywhere north of the junction

of the Olifants and Doorn Rivers.* Besides inhabiting the mountains, it is said to concentrate in thickets which fringe at intervals the banks of the middle and upper reaches of the Olifants River.

(73. *Pelea capreolus* (Bechstein).)

Hottentot: 'KNARIES.

Sparsely distributed among the mountains; one or two small troops of Vaal Rhebok are protected privately on farms near Clanwilliam.

* The Grysbok is coastal and subcoastal throughout its range, and extends, around the Cape, to as far north-east as Pondoland. In common with the Bontebok, it does not occur outside the Cape Province.

EDITOR'S NOTE TO PAGE 67.

Sub-Inspector S. V. Bowden (Cape Mounted Police, Ramans Drift) reported to the South African Museum in 1907 that there were about two dozen Hippo in the river [Orange River], chiefly in the 80-mile stretch between Viols Drift and the Fish River mouth, but that he had no definite information from localities east of Pella (S.A. Mus. files).

EDITOR'S NOTE TO FOOTNOTE ON PAGE 92.

In the Krebs collection in the Berlin Museum is the type of *Barbus serra*, a freshwater fish peculiar to the Olifants River, Clanwilliam Division. This may indicate that Krebs travelled also to the N.W. Cape, possibly in company with Dr. Andrew Smith.

EXPLANATION OF PLATE VII.

Upper Photograph.

- No. 1 (K.M. No. 3762d), *Papio comatus orientalis*, ♂, Bedford, Eastern Cape Province.
 No. 2 (K.M. No. 459), *Papio comatus comatus*, ♂, Kamiesberg, Little Namaqualand.
 No. 3 (K.M. No. 3993), *Papio comatus ruacana*, ♂, Kaokoveld, South West Africa.
 No. 4 (K.M. No. 719d), *Papio comatus chobiensis*, ♂, Caprivi Strip, Zambesia.
 No. 5 (K.M. No. 2014), *Papio cynocephalus*, ♂, Balovale, Upper Zambesi.

Lower Photograph.

- No. 1 (K.M. No. 42c), *Papio comatus orientalis*, ♀, Grahamstown, Eastern Cape Province.
 No. 2 (K.M. No. 605), *Papio comatus comatus*, ♀, Kamiesberg, Little Namaqualand.
 No. 3 (K.M. No. 8311), *Papio comatus chobiensis*, ♀, Sesheke, Zambesi (north bank, opp. Caprivi).
 No. 4 (K.M. No. 2669), *Papio cynocephalus*, ♀, Balovale, Upper Zambesi.
 No. 5 (K.M. No. 2672), *Papio cynocephalus*, ♂ (juv.), Balovale (Young of No. 4).
 No. 6 (K.M. No. 718), *Papio comatus comatus*, ♂ (juv.), Kamiesberg (Young of No. 2).

Nos. 5 and 6 (newly born) were approximately the same age.



An unusually large "Otomys" nest, presumably of *Myotomys unisulcatus* subsp., from the Fish River Valley, near Halesowen, Eastern Cape Province.

(By courtesy of the Albany Museum, Grahamstown.)

G. C. Shortridge.

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